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Non-Inflammable Fumigant for Use Against Waxmoth

(Galleria Mellonella Linn)

By Ray Hutson, Apiculturist, New Jersey Agricultural Experiment Station.

THE waxmoth was first mentioned as a pest of the honeybee by Aristotle (1). This insect lurks today in almost every climate, ready to destroy any honeycombs not adequately protected.

Paddock (2) has shown the scientific basis for artificial control. The use of carbon disulphide and the fumes of burning sulphur, the commonly used fumigants, is attended by a fire hazard. No set of directions for fumigation with these materials is complete without a caution as to danger from fire. Fumigation by non-inflammable paradichlorobenzene, following its successful use against peach tree borer, by Blakeslee (U. S. D. A. Bull. 796), and Peterson (N. J. Agr. Expt. Sta. Bull. 391), has not given entire satisfaction in the northern states because the temperature necessary for a quick volatilization does not prevail. This condition permits damage before a lethal concentration of vapor is reached. This is especially true with honey in combs.

United States Department of Agriculture Bulletin 1313 gives the results of tests of numerous organic chemicals for the control of grain weevils. The tests were made in an effort to find a substitute for carbon disulphide, the use of which is not approved by insurance underwriters. Six volumes of carbon tetrachloride with four volumes of ethyl acetate was found to be practically as efficient as carbon disulphide, for killing the weevils, at ordinary summer temperatures of 60 to 80 degrees F. The mixture is also effective against household insects when used in tight closets or containers (3). Other desirable features of this insecticide are: It leaves no odor on evaporation; its cost (around 15 cents per pound f. o. b. Baltimore in 50-pound lots), while higher than carbon disulphide, is not prohibitive, and from the fire prevention standpoint it is perfectly safe.

This last consideration led to a trial of the material for observation of its effect on waxmoth. Ten waxmoth larvæ of various sizes were placed on a small roll of comb foundation and allowed to start feeding. The roll of foundation containing the larvae was placed under a bell jar of known capacity and subjected to the fumes of a dosage calculated for that capacity. This was done for varying periods and different dosages. Pupa in cocoons were placed under the bell jars and given similar treatments. The number of larvæ killed was determined by gross appearance of the larvæ and the reaction to prodding with a teasing needle; the number of pupæ killed by keeping the cocoons after fumigation in jars, in a warm place, with access of air, until one month after the emergence of the checks which were subjected to the same conditions. The kill for the various concentrations and exposures is given in the ensuing table. The tests were conducted at temperatures varying between 60 and 85 degrees F.

TABLE

Concentration lbs. per 1000 cu. ft.	Number killed in given exposure in hours		
Larvæ	24	48	72
45	10	10	10
30	10	10	10
22½	9	9	10
15	2	6	6
Pupæ			
45	10	10	10
30	8	10	10
22½	4	5	5
15	2	2	2

An inspection of the table reveals that an exposure of 48 hours to a concentration of 30 or more pounds per 1000 cubic feet killed both larvæ and pupæ. This is compared with a 98% emergence of the checks run in bell jars of the same capacity under the same conditions.

An effort was made to discover whether the material would kill waxmoth in undisturbed combs. Six hive bodies were tiered up with newspaper between them and the calculated amount at the rate of 30 pounds per 1000 cubic feet poured in each. After 48 hours the combs were examined. All larvæ and pupæ were dead. There were also nine dead adult waxmoths.

Further tests at temperatures below 60 degrees F. show that the material does not all evaporate in the higher dosages.

Ethyl asetate with carbon tetrachloride, in the proportions used, is effective against waxmoth at the temperatures given. This is especially interesting when compared with the temperatures of the period in which the waxmoth is most troublesome. It does not kill eggs, as larvæ reappeared in the fumigated combs when kept under conditions inaccessible to waxmoth adults. The higher dosages required, combined with higher price, as contrasted with the freedom from fire hazard, are

the things to be considered in choosing between this material and carbon disulphide.

(1) Hist. Animalium IX, 27.

(2) Texas Agr. Expt. Sta. Bull. 158.

(3) Back, E. J. and Cotton, R. "A newly recommended fumigant ethyl acetate in combination with carbon tetrachloride." Jour. Ec. Ent. Vol. 18, No. 2, April, 1925.

Paper No. 281 of the Journal Series, New Jersey Agricultural Experiment Stations, Department of Entomology.

Exploiting the Marshes of Louisiana for Honey

By Herbert Dickson.

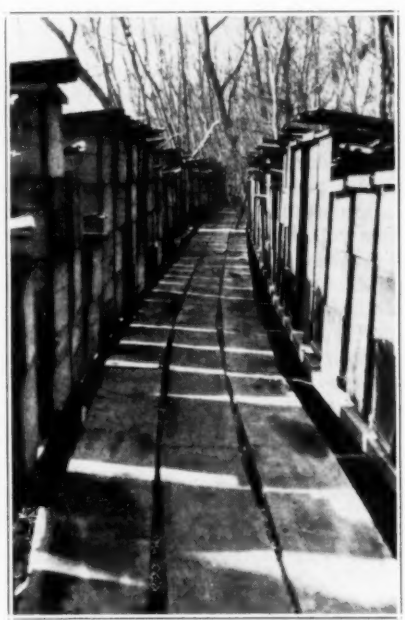
The bees are placed near the edge of the bayou on scaffolds, above danger of overflow.

NECESSITY has ever been the mother of invention. Due to this axiom, therefore, a method of bee culture has been inaugurated in Louisiana that is peculiarly adaptable to this section of the country, and which has proven to be successful.

Away down south—in DeSoto parish, Louisiana—the culture of bees is now in its infancy. But honey production promises to become a good money crop, and in this parish the farmers are taking a great deal of interest in the work. DeSoto, like the greater portion of southwest Louisiana, is in the "Land of the Marshes," and there is almost an unlimited number of honey plants all the time from March through July and August.

Heretofore these swamps have been neglected by the bee culturist; for, in the first place, the Louisiana swamps are difficult to penetrate other than by boat, and, though abounding in all species of honey plants, no beekeeper thought of devising some practical means to place his hives in reach of them. A few, to be sure, have ventured into these swamps and built hives, but during "high water time" the overflow in the marshes would completely destroy their hives.

The beekeepers, therefore, have confined their efforts, at gathering honey, to the river front. This was not so successful, however, as the bees were forced to cross the large plantations to find the honey flowers.



There are two rows of hives on the scaffold, facing out so they can be opened from the back.

Necessity, therefore, gave rise to this method:

The yards have been placed along the innumerable bayous out in the swamps. The hives are elevated on scaffolds, sufficiently above danger of overflow. The work of caring for the bees and extracting honey from the hives is by means of the little boats or pirogues that draw scarcely any water and are capable of being paddled into the most remote corner of the swamps. Thus far the work has been very successful and some four or five men have adopted this system. There are now around 8,000 hives being cared for from boats in DeSoto parish alone.

The usual number of colonies per yard is from 100 to 200, and best results seem to be had by placing the yards not closer than two miles. Placed at two- or three-mile intervals, 200 colonies seem to store practically as much honey per colony as though only 100 are kept. From 800 colonies in 1924, one beekeeper, Mr. F. Reed, secured 88,000 pounds of honey with this system, whereas in 1925, from 1,000 colonies he secured only three-fourths as much honey.

The experiment is being watched with interest in this parish, and many other beekeepers, similarly situated, have expressed their intention of giving the method a tryout.

(This article and the photos accompanying it remind me of southern Georgia, where I visited with one of Mr. Wilder's apiarists, Mr. W. B. Bradley, who was in charge of some fifteen of the Wilder apiaries. One of Bradley's apiaries was near his home at Fargo, where it was located so near to the famous Suwanee River that the hives were placed upon a platform to keep them out of the flood. And, by the way, if some of our readers have any poetic ideas concerning the famous Suwanee River, a short visit to the Suwanee will erase them. I have never seen a stream so sluggish, so uninteresting as the Suwanee. Perhaps it is more attractive nearer the sea; but it is certainly unattractive at Fargo, Georgia. The reader who preserves the old numbers of this Journal can find something on this matter in the August, 1918, number.—Editor.)

How to Handle Fertile (Laying) Workers

By C. M. Ewing.

It is almost useless to give a queen, cell or brood to a colony containing fertile workers. They will almost invariable kill a queen, and cut up a cell or kill a virgin. Many texts say "give them brood." They seldom draw out cells, and if they do the chances are that the cells will be short and ill fed because old bees do the work. I have tried the plan of

shaking them out in the grass one hundred or more feet away and introducing simultaneously a laying queen on frame with clinging bees. They killed the queen. If you set them over a colony you have one colony less.

I have a scheme which always works for me. Early in the morning when you think most of the workers have left the hive and not returned with their first load, set the hive aside, and on its stand place a new hive. Go to a strong colony and get the queen and two frames of brood and bees and place them in the new hive. Fill out with empty combs. Carry the fertile worker hive away some little distance. Next morning move it to a new spot. After the second change of position practically all the field bees will return to the new hive, and you will have only a few bees left—a mere handful. But the fertile workers are assuredly among these few bees, owing to their motherly instinct to stay with the combs. You may do as you please with them—use sulphur if you want to be sure, but this is hardly fair to the innocent. I set them over a strong colony (preferably three or four stories high) and I have never yet had a queen killed.

Now you can give the colony which was robbed of its queen a ripe cell, or a queen from the mails, and that colony will be going again in a few days. The new hive on the fertile worker stand starts off briskly, and you have not lost in the count of the colonies.

Beekeeping in Dalmatia, Jugo-Slavia

By Dr. Jean Sabo.

THE accompanying picture is that of the apiary and hut of Dr. Jean Sabo, former attorney-general of the Imperial Criminal Court of Russia, exiled from Russia by the revolution. He is now near Ragusa (Dubrovnik), Dalmatia, just across the Adriatic Sea from Italy. The picture given, however, was of his apiary when living near Belgrade, Serbia. He writes:

"I spent a year in the hut, shown in the picture, taking care of my bees. But now I own but three colonies, as I had to sell the others, and I am very desirous of increasing them in number, for the conditions here are exceptionally good. In the old days, honey of Dalmatia was very highly prized, as the mountains abound in rosemary, heather, sage, mint, lavender, etc. The bees harvest honey the year round, except in the rainy season. It is estimated that there are 33,000 colonies in the province, with only about a tenth of them in movable combs. We think commercial apiaries would be very profitable."

Record Book for More and Better Honey Sales

By Frank V. Faulhaber.

THE honey producer who does not keep a true check on customers is making some waste effort, for he has to do considerable sales work all over again, and, because of it, mistakes are bound to result. The beekeeper who holds onto his customers, by means of a figurative string, eliminates much uncertainty; he knows which customers respond; he knows just how much of his product he is selling, when, and how. Subsequent sales energies, naturally, can be governed accordingly. An accurate check enables him to suggest additional purchases, from time to time, just when the opportunity is most propitious.

There is promising possibility, for instance, in some sort of record book intended exclusively for the jotting down of customers' names and addresses, together with information hinting future sales. Let us show how this works: Mr. and Mrs. Hardleigh have three children—a boy and two girls; perhaps, also, there are others in the family—a grandmother and grandfather, for example. Very well; we can record all this, everything being neatly and compactly condensed, so that when the beekeeper wishes to know how a given family or customer is buying, and what likely propositions are in order, there is everything in black and white.

There is no guesswork. You find that the Hardleigh family has not been buying honey from you for some time; therefore it is important to get in touch with them and ascertain reasons why.

If dissatisfaction resulted, whether fancied or real, by reason of the quality of the honey, it is imperative that this be righted, to retain the customer's good will and to bring about more, better, and satisfactory purchases later. The purpose of this record book is at least two-fold. You have the further means of suggesting just such purchases as would impress the individual prospect most favorably. The Hardleigh family should be particularly interested in honey because there are children; hence, you can base your sales letters or canvassing work on the data. Instead of the mother buying candy, she can procure your honey regularly. Good, convincing, logical appeals will develop an appreciable number of extra sales that ordinarily would never result.

Such specialized sales work would command attention from customers, since they would realize that you are interested in **them**—enough, in fact, to tell just why **they** should buy honey. The specific sales message earns most returns because it usually concerns the prospect **individually.**

At any time you want to get in touch with each customer there's the handy record book. Good work can be accomplished by means of the telephone, postal cards, etc.

(We will add the suggestion that customers' names and addresses be arranged in card index form, alphabetically, so that every purchase of a customer be recorded on his card. This gives you a history of each customer, with the mention of what kind of honey he prefers, etc.—Editor.)

Established by Samuel Wagner in 1861.

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Queen-Rearing Under the Swarming Impulse

Quite a little discussion is going on in Europe just now on the question whether queens must be reared by colonies preparing to swarm, in order to be first class.

Nobody will dispute the assertion that queens raised by colonies that prepare to swarm are good, but it is certainly possible to create conditions that will enable the bees to rear as good queens as the best, even from queenless colonies. Read Jay Smith's "Queen Rearing Simplified" and see how much stress he puts upon keeping the bees well fed and having them as numerous as possible for the amount of brood they have to care for. Whether we rear queens in the upper story of a colony which is queen-right, or in a queenless colony, it is not difficult to place them in a condition which will impel them to copiously feed their queen larvæ and keep them very warm. That is all that is required. Of course, there must be plenty of young bees, in a queen-rearing colony, since the young bees are the ones that produce the pap that is so necessary to the full growth of the larvæ.

I quoted Jay Smith, but he only emphasizes what others have already said. Read Doolittle's chapter on "Feeding": "In all of the work of queen-rearing it is essential, if we would produce good queens, to feed the queen-rearing colonies . . . "

All through Pellet's "Practical Queen Rearing" you will find the same tone: strong colonies, plenty of honey and pollen, young bees.

If we follow these suggestions, we are just as sure of securing good queens as if they were raised under the swarming impulse.

But Perret-Maisonneuve, in articles written for the French Bee magazines, "L'Apiculture Francaise" and others, calls our attention to a fact that we all know, but which some of us overlooked, that if we rear our queens from colonies preparing to swarm we will enhance and cultivate the propensity of bees to swarm and thus work exactly contrary to our wishes; for we all desire to control swarming and produce our increase from the best queens, but from colonies which have a marked tendency to fill the supers instead of casting swarms. Queens reared under the swarming impulse are bound to inherit the traits of the colony whence they issue.

So, on the whole, we had better not rear our queens under the swarming impulse, but from colonies placed in the very best conditions to rear good queens.

What Happened to the Honey Market

There seems to be a definite relation between the demand for food products and the kind of publicity which is going the rounds of the press. During the epidemic of foot and mouth disease in California, cattle prices ruled very low. When the newspapers told of the possibilities of typhoid fever being contracted from eating oysters, the demand for oysters immediately fell off very noticeably. A few months ago there was much in the papers about a mysterious disease of poultry and demand for poultry products was at once greatly reduced and prices seriously declined.

A story of poisoning through eating ripe olive pickles nearly ruined the olive industry.

The latest example of this kind is the recent newspaper stories going the rounds of the English press to the effect that because American fruit growers spray their apple trees with arsenate of lead to kill the worms which would otherwise infest the fruit, there is danger of getting poisoned from eating American apples. The following from a press despatch dated April 6th gives an idea of the extent of damage from such publicity:

> "The poison apple scare has hit the British market so heavily that many Covent Garden commission merchants have ceased handling apples from the United States for the time being. . . . London merchants estimate that American apple business has fallen off from forty to sixty per cent.
>
> "Several large commission merchants say they have stopped buying apples from the United States altogether."

Our honey market is now feeling the effect of an excessive amount of publicity concerning bee diseases through the newspapers. Inspectors with good intentions have given newspaper reporters stories about bee diseases and have thus done more harm to the honey market through ill-advised publicity than they have done good in the treatment of disease.

There has been a constant supply of news about foulbrood and disease among bees, about quarantine and stopping of shipments of bees or honey until the public appetite for honey is affected.

No estimate can be made of the damage to the market as a result of this widespread agitation of bee disease through the press. The public is not interested in disease, it does not care anything about it except as it affects the food that comes to market and the natural result of so much publicity about disease has been to reduce the demand for honey to a point where the beekeeper will have to hustle to re-establish confidence in his product.

One's appetite is never stimulated by stories of this kind. If everybody would talk about the happy side of beekeeping and be ready with stories of beekeeping success, when newspaper men offer an opportunity to reach the public, instead of painting a doleful picture of disaster and disease there would be less complaint of poor demand for honey.

The Season and the Apiary

This has been a very bad winter for bees, for in spite of the comparatively mild weather, the changes of temperature and irregularities have been so great and so sudden as to weaken the colonies very much. Bees that were numerous in hives in February were scarce in May. It was the right kind of season to buy bees from the South, to strengthen the northern apiaries.

This has been a rather general condition. Many letters came, asking why the bees were deserting the hives, with brood and honey in them. Many queens died, apparently without cause, other than the weakness of their colonies. Where the white clover crop is promising, it will be hard work to get them ready for it.

Here, at Hamilton, we find the clover scarce and the prospect none too good. Honey that has been held over owing to low prices may prove more valuable the coming fall. There is always a lining to the clouds.

Keeping the Queen Away From the Upper Stories

Our attention is called to an article in "L'Abeille Bourguignonne," by E. Berson, in which it is asserted that the best way to keep the queen from going into the upper stories is to have those combs spread farther apart than those of the brood chamber, 45 millimeters, or 1¾ inches, apart from center to center, instead of 1½, for the combs are then built with cells so deep that the queen finds it impossible to reach the bottom, in laying.

On page 42 of "The Dadant System" we called attention to the fact that we always place the super combs farther apart than the brood combs, placing nine frames in a 16-inch super. But we never thought of giving that as an advantage other than saving some handling. Yet the statement made is correct, that the queen does not relish such combs for breeding. However, we know that, in case of need, the bees will shorten the cells of some of this comb in order to facilitate her laying eggs in them. When there are no drone cells below and the queen wants to lay drone eggs, which she appears to be able to explain to them, they do shorten some of those drone cells, in the super, and the queen lays in them.

But, on the whole, we believe that there is a pretty good suggestion in this statement that there will be no brood reared, or at least less of it, in a story the combs of which are spaced 1¾ inches from center to center.

Destroying the Colonies to Wipe Out Foulbrood

A number of beekeepers are advising to burn up entirely every colony which is found with foulbrood. Well, of course, that may do what is intended. But we cannot see it that way. We had not seen foulbrood anywhere except in Colorado, when it invaded our apiaries. We had heard of it being in Illinois, Indiana, Missouri, etc., but it was only hearsay. When it did come to us, we found it in so many colonies that we concluded the best way was to treat every colony. We did. This was in 1907. In 1916, or nine years later, we harvested our banner crop of honey, 125,000 pounds from 525 colonies. Now, friends who preach destruction, where would we have been in 1916 if we had followed that wiping out of colonies in 1907?

I can readily understand the destroying of one colony when it is found with foulbrood, **if that is the only colony having it in the neighborhood.** But whatever accident which gave the disease to that colony may have given it or may yet give it to others.

Treat the disease promptly, carefully, thoroughly. But don't kill the patient to get rid of the disease.

Windbreak for Apiary

We receive the following suggestion from Mr. Rene Brasseur, of Vaudreuil, Quebec:

"I do not have any trouble with snow, because I winter my bees in the cellar, but I have considerable trouble with winds, especially in spring and fall, as I am on a cape. The cheapest and best windbreak I have found to be an arbor covered with wild grape vines all around my apiary. I make it about ten feet high. It is inexpensive, lasts a long time and gives the apiary a very fine set-off, besides yielding some grapes for wine."

If it is possible to have a good windbreak with grapevine arbors in Quebec, one can surely have it succeed in any of our states.

Honey Cook Book

In our next issue, we will give a description of the honey cook book of Miss Fischer, of the Honey Tea Room of Madison. Miss Fischer is known to our readers through the description given of the Honey Tea Room in our September number of 1925. The Honey cookbook will sell for a dollar, and we will accept orders for it here. It is reported as the finest ever published.

The Passing of a Pioneer

Ambrose Pellett, father of the associate editor, died at his home near Atlantic, Iowa, on May 4, in his 82nd year. Mr. Pellett was a pioneer settler in Cass County and assisted in laying the foundation of the present civilization there. He laid out roads, platted cemeteries, assisted in building the first schools and churches and in the general development of the community.

His death took place in the room where the associate editor was born, in the house which has been the family home for more than half a century.

The Pellett family has had a part in the frontier settlement of the country from the founding of Plymouth colony until there was no longer any unsettled regions to subdue. A forceful and upright man, Ambrose Pellett was prominent in the affairs of his county and state for many years. He is survived by three sons. His wife preceded him in death by three years after celebrating the 55th anniversary of their wedding in 1923.

The Next International Congress

The managing committee, in charge of the decision as to the next International Congress, has decided to accept the invitation of Professor Edoardo Perroncito, of Italy, and to hold the next congress at Turin, Italy, at Easter, in 1928.

The membership fee is fixed as follows:

European Countries: Active membership, 10 francs or lires. Protective membership, 20 francs or lires. Bee associations or countries, 50 francs or lires.

American Countries: Active membership, $2.00. Protective membership, $3.00. Bee associations or countries, $5.00.

For Italy, membership fees should be sent to Dr. Calamida, Turin. For all other countries, remit to Leon Tombu, 185 Rue Gaucheret, Brussels, Belgium.

The Huber Letters

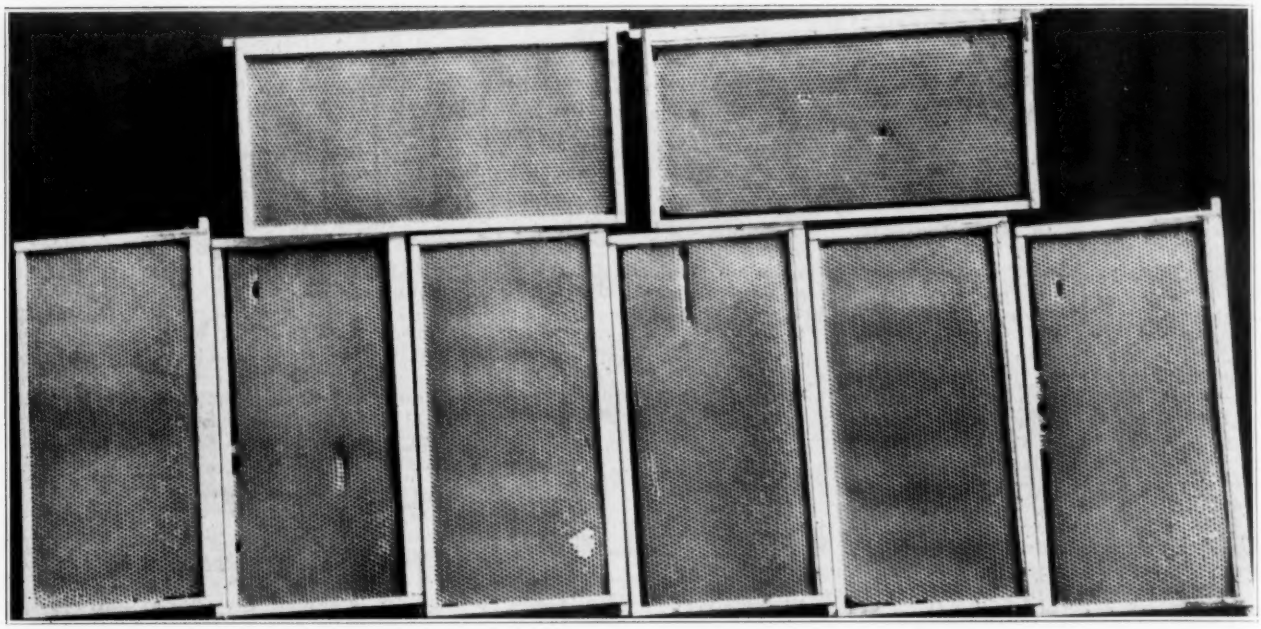
There appears to be a possible misunderstanding by some readers as to the "New Observations" of Huber versus the "Unedited Letters" of Huber. The "New Observations" is his principal work, upon which much of our knowledge of the natural history of the bee is based. It was published originally in 1792, then enlarged and published again in 1814. It had four English abridged translations. The "Unedited Letters" were gathered together long after his death by Edouard Bertrand, who published them in his magazine, "The Revue Internationale," and they were translated and published in the American Bee Journal from 1921 to 1924. The latter letters treat of different subjects on the honeybee, but do not have the importance of the "New Observations."

Bees as Fertilizers

Our editor wrote an address upon the usefulness of bees in fertilizing apple blossoms, as evidenced in the experiment upon 1200 acres of orchard, mentioned on page 70 of our February number, by Mr. Cale. This address was written in the French language and read at the November 1925 meeting of the Quebec beekeepers. We are greatly pleased to find that it was reproduced in "L'Abeille" of Quebec, in the Swiss "Bulletin de la Societe Romande," in the "France Apicole," and in the Algerian "Nahhla L'Abeille." This indicates that the utility of bees so well demonstrated is appreciated.

"The sweetness of corn sugar is only about one-half of that of cane or beet sugar."

(Extract from a letter to C. P. Dadant by the Acting Chemist in charge of Carbohydrate Laboratory of the Bureau of Chemistry of the U. S. Department of Agriculture.)



Combs drawn from foundation, under unfavorable conditions, are often damaged by the bees. Although the above combs were from both wired and plain foundation, the heavy damage is in the combs in the hand-wired frames. The position of wires makes no difference to the bees. Some of the damage is in the free wax where there are no wires, and this kind of damage is frequent.

Behavior of Bees In Comb Building---No. 2

By H. C. Dadant.

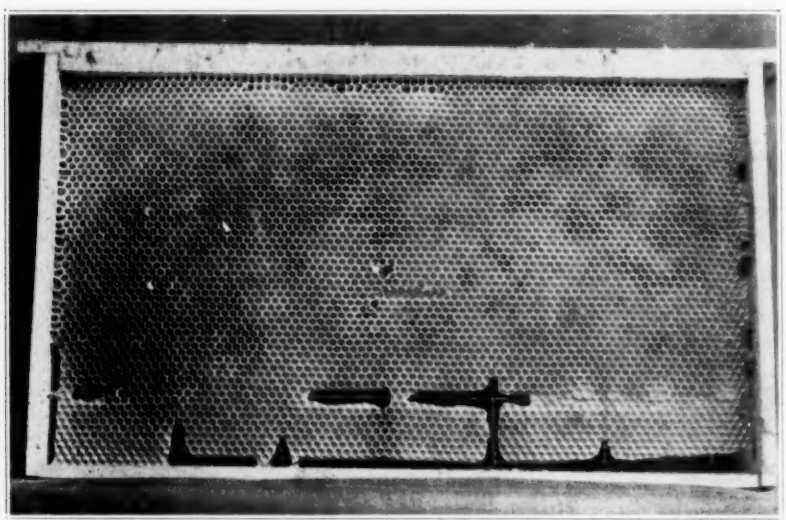
THE great majority of beekeepers and authorities, among whom is Dr. E. F. Phillips, of Cornell, find medium brood the best grade of foundation to use. While ten pounds of honey is considered a good average estimate consumed by the bees to produce one pound of wax, Dr. Phillips believes it to be well above this.

In 1911, the Foloppe Brothers, of France, concluded, after many experiments with different weights of artificially colored foundation, that 5½ to 6⅞ sheets, Langstroth size, to the pound, exclusive of wires or other reinforcement, was the best weight in building brood and extracting combs.

Although wax is plentifully supplied by bees during a honeyflow, they do not produce it at maximum capacity when it is not needed. Because a surplus of freshly secreted wax scales is sometimes found in the hive some have erroneously concluded that wax secretion is continuous and costs the beekeeper nothing.

It is known that native German bees build cells smaller than do Italians. Foundation is made in different sizes of cells in Europe, but, in this country, we have about a uniform size. No one, so far as I know, has definitely determined if some colonies among bees of the same race contain larger average size worker bees than others, and if so, their dimensions. It is quite probable that there is a variation in size, which would agree with the rule among animals. Dr. Merrill found that the honey sacs of some colonies are larger than others, so we might expect a variation of a few thousandths of an inch in the average size of cells built.

So long as the queen is active and keeps pace in her laying with the workers in building combs, worker cells only are built without foundation, but eventually the brood nest is expanded beyond her capacity and considerable drone-comb is built. Under such conditions the drone-comb in the colony represents about 15 per cent, but in case there is plenty of room for expansion and a swarming fever develops, 20 per cent or more of drone-comb may be found. Although it is always advisable to use full sheets of foundation in frames, there is a time when starters of foundation are of value and that is when honey is coming in slowly, or with



A comb built in a dearth and damaged by bees tearing away wax for dry comb building. It is claimed that such damage is more evident on the vertical wires, but a close examination of such frames shows that this is a misconception. Also the percentage of tearing is usually very small, not over one or two per cent at the most.

small swarms. These conditions do not often present themselves nor remain long enough to become of value in practice. There is the ever present likelihood of the honeyflow becoming better with consequent need of greater comb space which full sheets of worker foundation readily afford.

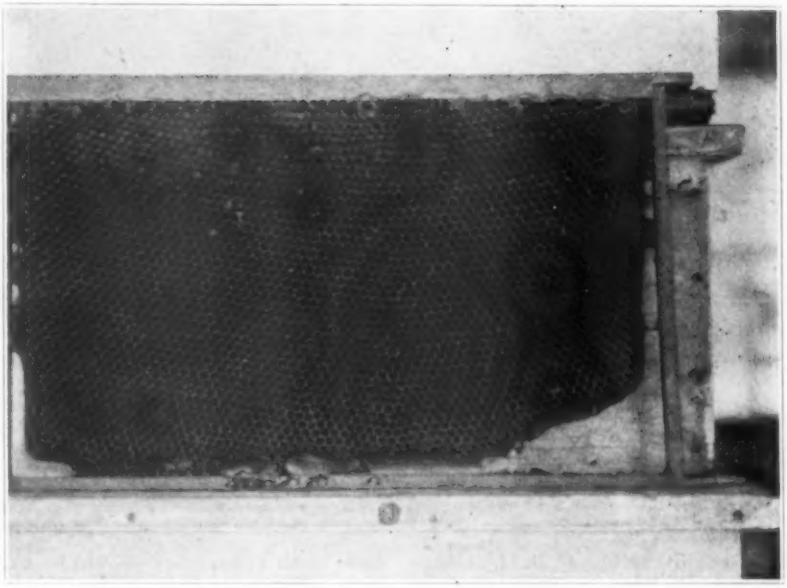
Nuclei and bees shaken from combs are often short of food and cannot be expected to do satisfactory comb building. Very few frames should be given them at the start unless heavy feeding is done or a honeyflow is on. In any case, they cannot secrete wax without food and must have it to start building up a new home.

Combs drawn in the brood nest and hanging near the entrance may often be recognized by the lack of completeness at the bottom bar. Comb and stores are kept away from the entrance for protection from invaders. Some have practiced providing more than an inch of space from the bottom board to bottom bar, thereby not only supplying good ventilation for summer use but also encouraging the bees to make combs complete at the bottom.

Since the behavior of bees in building comb in supers usually results in a complete comb from top to bottom, having them drawn above the brood nest is a practice which should **by all means** be followed whenever possible. Many good beekeepers have long practiced this method, but occasionally one who has been a honey producer for a number of years has entirely overlooked this valuable trick. If nuclei or bees taken from combs must be hived in the brood nest on comb foundation, damaged and sometimes quite imperfect combs will result unless care is exercised in giving them only a very few frames at one time and also feeding during no flow. Dr. Miller once told us that sometimes bees seem to make defects in combs as if in pure mischief.

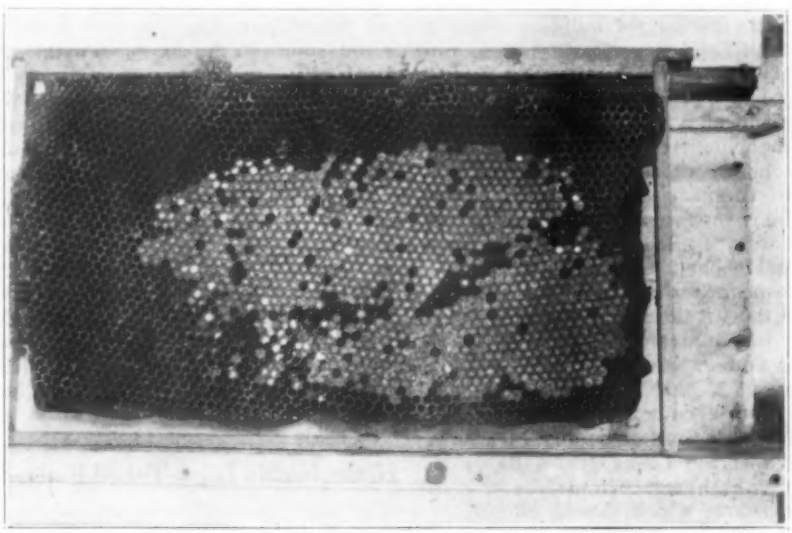
To make a thorough test of the behavior of bees in working out various kinds and grades of foundation, we have used in our own apiaries at Hamilton all the different kinds available and in different grades of brood from the lightest to the heaviest. Their behavior under adverse conditions is quite uniform. I have talked to many other beekeepers along this line and find there is nothing in location, except so far as honeyflow conditions are concerned, which directly affects the rapidity and completeness of comb building, as the honeyflow increases or decreases; no honeyflow, no comb building unless feeding is resorted to.

During a lack of honeyflow, you have probably found sheets of foundation drawn out so far as the wax furnished in the bases and side walls of the cells would supply. This I have termed "dry comb building." Hardly a drop of honey or a pellet of pollen is found. The bees are active in expanding their work so far as possible, and sometimes they go too far by cutting the foundation away in places to use it in other places. This is especially true at the bottom, where they build last, in nature. In fact, even unoccupied drawn comb will sometimes be torn down to build up others. During a time of such trouble you may be sure the honeyflow is not satisfactory and that some frames should be removed from the colony, leaving an empty space for ventilation, if needed.

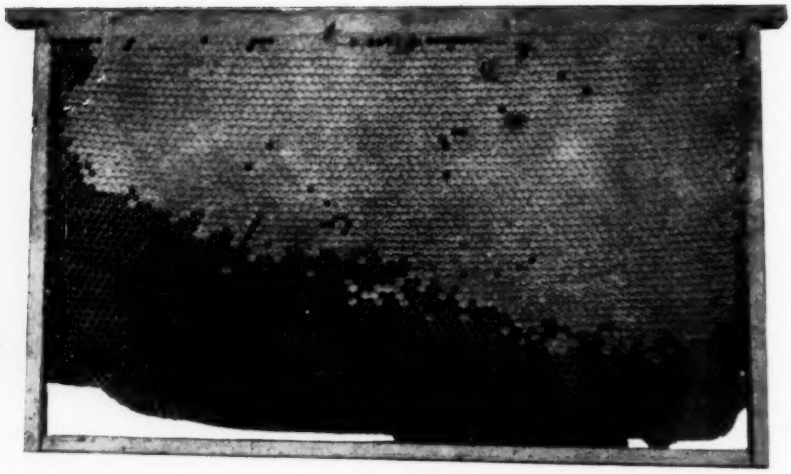


An old comb, badly stretched and of little value in the brood nest.

A number of years ago, Mr. H. Vogeler, of California, devised the practice of painting liquid wax on foundation to avoid sagging. This practice helps and is likely most valuable from the easily available surplus wax it affords the bees in their work. It gives them wax to work on when the honeyflow is slack and no doubt delays them from cutting into the mid-rib, which some colonies do at such a time. Since the apiary cannot always be visited at frequent intervals, say every week or ten days, and it is not possible to predict in advance whether the honeyflow will be satisfactory, painting liquid wax on sheets after fastening in frames is in some cases of value. It is impossible to expect good combs by leaving foundation in colonies for weeks when right comb building conditions are not there.



Comb in which worker cells have been replaced by drone cells after damage to original comb. All it is good for is wax.



A comb taken from the brood nest after winter. Note how the bees reduce the comb at one corner, the corner near the entrance. This is common and sometimes the damage to combs in winter is so severe that the comb is rendered worthless.

The comb building instinct expands rapidly into every corner of the hive under favorable conditions, and if perchance an empty super has been previously furnished for the purpose of relieving a crowded condition at pre-flow time, the bees will spring a surprise on the busy farmer by presenting him with some nice natural comb. They will usually enter a space of this kind near the brood nest where no foundation or wax exists, more readily than the small compartments of comb honey supers. Their behavior on sections or frames previously partly drawn is quite a satisfaction and benefit to the beekeeper. The use of what Dr. Miller has called bait sections or bait frames induces bees to enter and readily work in supers.

Even though certain strains of bees have been kept, watched over and in a certain sense domesticated for years, they show no results of training in comb building. Without wax guides, they immediately revert to their instinct of building comb in various fashions, crossing from one empty frame to the other, as though they had never been given a rule by man. Under such circumstances the combs comprising the main brood and honey storage area are built quite compact though seldom very regular in form. Odd spaces and corners are filled with comb of indescribable shapes.

Swarming time is comb building time, and it is astonishing how rapidly hived swarms will thin down comb foundation, build the comb out to about a half inch depth on each side and even complete ten large combs in two or three days. On such occasions the beekeeper is likely to be caught unaware and lose a crop or a swarm which should be his.

Since it is impossible to expect the bees to read the directions on how comb foundation should be used, it is mindful of the bee man to follow them if he has not had sufficient previous experience. Do not be like the foreigner who had laid in a supply of paints for preserving the surface of his barn. He had read the directions on the can labels as best he could and one morning he was found by his neighbor with brush, bucket and ladder, in the back lot, ready to start painting. It was a bright, warm morning when the neighbor hailed him and, remarking about the fine beginning of a day, expressed regret that he must not be feeling well, since he had on heavy clothes. The man of foreign birth, with only a year in America, looked puzzled and replied: "Me sick? No, me had big dinner dis morning. I tell you de paint bucket say put on tree coats; you see dat's vat I did."

The best sheet of foundation may produce a poor comb under adverse conditions and a none too good sheet of foundation may provide a fairly good comb if the bees have the opportunity to exercise good behavior in comb building. Fortunately, the comb foundation put out by most manufacturers is good, so that the beekeeper has little trouble in getting something worth while.

To succeed in working to the best advantage with the behavior of bees in comb building, first do your part in properly preparing the frames or sections with full sheets; have combs drawn above the brood nest if possible, and furnish them as needed, while the honeyflow or feeding causes good wax secretion.

Honeybee on Long-Tubed Flowers

At the Kansas City meeting of the Economic Entomologists, A. C, Burrill, Curator of the Missouri State Museum, read a very interesting paper on the subject of "Bees on Long-Tubed Flowers." Some of Burrill's observations throw light on the confusion which is to be found in the literature concerning this subject.

There has been much argument as to whether bees can get honey from red clover. It is well known that the clover is rich in nectar, but because the corolla tubes are longer than the tongue of the honeybee some argue that the bee cannot reach it. Burrill shows that at times aphis are present on the heads of the red clover and that honeydew is present in abundance between the florets, and that the bees store honeydew from this source. Beekeepers seeing the bees at work on the red clover might easily overlook the presence of the aphis and the fact that it is honeydew the bees are getting. In the case observed by Burrill in Idaho the result was a red-tinted honey from this honeydew.

Burrill also reports the presence of lady beetles, western flower bugs and other insects attracted by the abundance of aphids on which they fed. He states that beside preying on the aphis some of these insects may be found to puncture the clover florets toward the base and thus make available the nectar which may be present in the flower tubes. He also reports bees getting nectar from red clover where bumblebees and wood bees had pierced the corolla tubes, thus making it accessible. Cases are mentioned where the honeybee has been known to puncture in this manner the corolla tubes of flowers too deep for them to reach the nectar. Dadant (Honeybee, page 96), Pammel and other observers are quoted in this connection.

It thus becomes apparent that the fact that bees sometimes store surplus honey (or honeydew) from red clover is well established.

The literature of this subject was reviewed at length and many cases noted where the honeybee is known to seek the nectar of numerous kinds of flowers through the openings made in the tubes by other insects. Much careful observation is needed to determine to what extent the honeybee is able to make openings in flower tubes where otherwise the nectar is beyond its reach. As Mr. Dadant has said, in the paragraph quoted by Burrill, it is evident that such cases are too rare to be of much importance in the normal gathering of the crop. Many things are of interest, however, which do not seem to be of immediate practical importance.

The Prevention of Swarming

By C. P. Dadant.

A LARGE amount of advice is regularly given for the prevention of swarming. Most of it is based upon the necessity of giving the queen ample room, and in most cases something resembling the "Demaree" process is advised, removing the brood from the lower brood chamber and putting it in an upper story, two or three stories removed from the main brood chamber, where the queen is allowed to remain, and, in fact, where she is usually confined by a queen excluder. A number of leading beekeepers succeed well with such a method, the only objection to which is the amount of labor that it involves at the busy season and the impossibility of carrying it on with the production of comb honey.

But aside from the numerous suggestions to prevent swarming, there are some fundamental requirements, which, if carried on carefully, will secure the minimum of swarming; for it is out of the question to entirely prevent swarming, if the season is good. But it can be reduced to such a minimum that it is not worth bothering about. We have often stated that, in the season of 1916, with a crop of 125,000 pounds of honey from 525 colonies, we had less than thirty swarms, while a beekeeper living only two miles from our home apiary and keeping his bees in eight-frame hives, without supervision, had thirteen natural swarms from five colonies.

As a matter of course, the main requirement is plenty of room in the hive, both for the honey crop and for the laying of the queen. Large hives and large supers are therefore indispensable. If the queen is crowded for room, at a time when the bees feed her heavily with the predigested pap that they produce then in great amount, there will be restlessness on her part and preparations for swarming will result.

Another requirement, and perhaps as great in importance as the need of room, is the need of ventilation. Tens of thousands of colonies are allowed to suffer from want of ventilation during the hot weather. They cluster on the outside and hang out sometimes in such a way that they interfere with the field workers' ingress when they come home loaded. They also interfere with the necessary ventilation of the hive, since it is impossible for the bees to live without air, and a current must be established which runs up to the farthest corners of the hive and down and out again. It is easy to see of what importance the bees consider this air requirement, since they spend much time and energy in forcing pure air through the hive. Without this, the temperature would rise above the safe point and the combs would break down. So it is important, not only for the prevention of swarming, but for the successful harvest of as large an amount of honey as possible, to procure ventilation, by raising the hive from its bottom until all the bees are at work and none are caused to remain idle, **"making a beard,"** as the French say. The cluster of bees hanging outside is indeed often very much like a man's beard, in appearance.

Here is where the spacing of combs an inch-and-a-half from center to center proves its superiority over the common spacing of an inch-and-three-eights. The difference is very slight, yet it supplies the bees with over 150 cubic inches of additional space between combs, that enables them to keep down the temperature with much less difficulty than with the narrow spacing. In the upper story the spacing may be even greater, say an inch-and-five-eighths. This may help to keep the queen from going into the extracting combs, since she is not able to reach the bottom of the cells to deposit eggs when they are of such great depth. For this purpose, we have made our supers, for years, sixteen inches wide, inside, with only nine combs, properly spaced.

Shade is of great importance, in a country like the Mississippi Valley, where the temperature is high enough to melt a piece of comb, in the sun, when accidentally left on top of a hive. Without shade, the boards of the cover will probably attain a heat of 160 or more degrees F., and often there is nothing between that cover and the super combs. We like to use some sort of shade, rough boards, weeds, or a live shade such as that of trees, a grape vine, etc. Besides this, we have, for many years, supplied the top of the combs, in addition to an oilcloth, with a mat made of straw or long slough grass, which keeps the heat off in summer and protects the top of the combs in winter.

But in addition to the indispensable requirements of space for brood and honey, ventilation and shade, some other requirements are necessary to be fulfilled, and let me here say that they not only help to prevent swarming, but also help to secure a maximum production of surplus.

A young queen is needed, for if the queen be old, she may lessen in her laying at the time when it is most earnestly needed, so that the bees perceive the necessity of replacing her. They build queen cells and the old queen may then very readily take offence and leave with a swarm. Those queen cells, reared for the emergency, turn out to be swarming cells. If the queen is young, an accident of that kind will not happen.

When I speak of keeping young queens I do not mean that we should replace our queens annually. To my mind, a queen in her second year is at her best. Some queens may need to be replaced annually, but if they appear prolific, I believe it is undesirable to replace them until they are past their second year of service.

Drones are a nuisance if reared in such numbers as the bees are willing to produce them in the average hive in a natural condition. The average of drone comb, in a hive, when the bees are left to their own devices, is from one-seventh to one-tenth of the space occupied, which means that the bees may produce from 3,000 to 5,000 drones in any colony. If we enquire into the purpose of nature for the production of such an immense number of idlers, we will discover that it was simply to protect the reproduction of the race in a positive manner. The young queen has to take flight in order to mate. If there were only a few drones in the air at the time of mating, she might have to take several flights, from an isolated colony, before she could meet one, and would be exposed to the dangers of winds, rain, predatory birds, etc. So nature provided for an ample supply of drones in each hive. But now, when we keep from ten to a hundred hives in one spot, it goes without saying that the drones of two or three hives will be ample to meet all the requirements. Those drones may be reared from selected colonies by supplying them with drone combs in the center of the brood nest, and the undesirable colonies may be entirely deprived of drone combs. It is true that each colony may manage to rear a hundred or two of drones in corners, but there will be no such over-production of them as would be provided in the natural way.

Some beekeepers claim that drones are needed to keep the brood warm. If such was the case, why should the bees kill them off in spring whenever the temperature goes down? That is exactly what they do. We have always done away with the drone comb and replaced it with worker comb wherever we did not want it, and have never known the hives to suffer.

The influence of a great number of drones is quite important, for

they keep the hive crowded at a time when the heat is beginning to make their presence objectionable. Besides, they fly in and out at the busiest time of day and get in the way of the workers. It has become a custom to say that the bees will soon swarm because many drones are about. They do help to cause swarming.

Now, as I have said above, it is out of the question to prevent swarming altogether, but we can greatly reduce it, abolish ninety-five per cent of it, by following those simple rules, which also help in great ratio to increase the honey crop: Plenty of room for breeding and for storing honey; plenty of ventilation throughout the hives; plenty of shade, especially in our central states, where the temperature readily reaches 100 degrees F.; young queens and few drones. All those provisions are simple, must be attended to anyhow if we wish a full honey crop, and do not prevent such other measures as you may wish to employ, such as the Demaree method, removal of queen cells, etc.

In addition, let us rear our young queens from thrifty colonies that do not care to swarm. We will thus add another favorable condition to the others, and that is prevent the production of a swarming race of bees. Artificial increase is much more to be desired than natural increase, and a better crop is the result.

The Albino Bee

By Virgil Argo.

I am in Maryland spending the spring and summer studying the life history of the bee louse for the Division of Apiculture of the Bureau of Entomology. While in this locality last year and this year I have had occasion to see quite a few of the Albino bees and to talk with people that have had them. I have not had experience as a commercial beekeeper, but in the study of the bee louse I have to handle bees a great deal, and the Albino bee has been a very interesting matter to me ever since I first heard of it last year. All I can say is to tell you what I know of the bee and what I have been able to find out concerning its past history from the son of Sylvester Valentine, who first put the bee on the market.

As I have seen it here, the Albino bee has a dark abdomen, very distinctly marked with conspicuous white bands, much in the same manner as the abdomen of the Carniolan bee, but the hair on the head, thorax, abdomen and legs of the Albino is distinctly white in the colonies where the strain has remained pure. They are a very handsome type of bee, and as far as I have had anything to do with them, they have been very gentle; they do not run about on the comb and are not easily excited by even considerable manipulations of the combs. In observing the bee lice it sometimes is necessary to open a hive for a rather long period of time, and often one neglects to keep close watch on the bees for any indications of annoyance on their part, a treatment which often leads to disastrous results to the investigator; but I soon formed the opinion that these Albino bees were uniformly very good tempered and not at all restless. I have no real data concerning their honey gathering ability, but the hives that I have seen were prosperous and the men who have owned them are strong in their praises as bees which will gather a large surplus.

I have been most interested in the Albino bee from the genetic side of the question. From talking with Mr. Valentine's son it would seem that the bee is not the result of crossing different strains. He says that the Albino type first appeared in the bees owned by a man named Pike who lived at Smithburg, Maryland, near Hagerstown. He said that this man did not have more than twelve colonies and was not much of a beekeeper, but he claimed to have this peculiar bee and old Mr. Valentine heard of it, and, after seeing the bees, obtained the colony or colonies from Mr. Pike and by careful inbreeding obtained the pure strain of Albinos, which he put on the market. It would appear that there might have been a mutant strain which was the beginning of the Albino bee, but it would be a very interesting subject for someone to take up as an investigational problem.

It is an interesting fact that the bees tend to preserve their individuality even when kept for long periods of time along with blacks, hybrids and Italians; the silvery hair may become yellowish, but the white stripes on the abdomen will persist and make the bees stand out in a conspicuous manner.

The little boy said: "Mamma, the flowers, they're the groceries of the honeybee."—Gabrielle Reval, in La Gazette Apicole.

Good Idea for Beekeepers Too

"Name your farm home," is the slogan of a movement fostered by home demonstration agents in Tennessee for the past four years. More than 3,000 homes have already been named, according to a report received by the United States Department of Agriculture. This year the idea is again being stressed, as there are still many homes which have not registered a distinctive name either with the extension service or the State Department of Agriculture. The state recently passed a law permitting such registry.

Farm home owners are urged to give some thought and trouble to the selection of the right name. It should be dignified, suitable, lasting, not too common, easy to say, easy to read, and easy to remember. It should appear on the mail box or over it, or on a signboard, or on the gate. It is intended that it should be used on letterheads and on the label of anything sold from the farm.

The naming of the farm home is often the first step in general home improvement. There is an effort to live up to the spirit which has been embodied in the new name. The indirect effect of the name can often be seen in the grading and standardizing of products offered for sale.—U. S. D. A. Clip Sheet.

The Larva of the Braula Coeca

The Swiss "Bulletin de la Societe Romande," in its December number gives a very interesting photo of the cappings of combs infected with the "bee louse" and also a cut of the magnified larva of the same louse, by Drs. Morgenthaler and E. Elser, of the Bacteriological Institute of Berne. The cappings of the combs are underlined by fine lacings or galleries made by this small larva. It would be worth inserting in our columns were it not that the bee louse or Braula coeca is of very feeble interest in this country, since so few of them are found. Even in Europe, they are of limited interest, for they do not exist everywhere. But their study is certainly interesting.

Well Known Beekeeper Dies

E. E. Townsend, well-known beekeeper of Fort Dodge, Iowa, died on April 21 of burns received the previous afternoon when the car on which he was working backfired and set fire to his clothing.

Mr. Townsend was 70 years of age and had followed honey production as a business for many years.

The clover patch by the elevated train.

Keeping Bees In New York City

Fireman Timothy O'Connor Has Thriving Apiary In the Shadow of the Elevated Trains That Is Envy of Professional Beekeepers

By Helen Rich.

IN New York City song-birds stop for a few minutes in spring to rest from a long journey. They sing a song or two in pity and then go on to clean, sweet places, leaving the gritty window ledges for sparrows to chirp upon. The trees grow bravely and wearily and long before autumn comes to the country their leaves are withered to a dusty yellow. Each year some optimist sets out a window box of brightest flowers and is yearly tearful because they droop prematurely. The sunlight filters into walled streets and the stars struggle dimly through the smoke of a million chimneys.

But in New York there are bees whose honey is as sweet as any in all the country. "Busy as a bee" was never so true a saying. They work hard and terribly for their livelihood.

Here and there on the great island of Manhattan are patches of land where apartment houses or filling stations have not yet taken root. There is such a plot next door to the apartment house at 429 West 214th street, where Timothy O'Connor, fireman in hook and ladder company No. 36 of the New York fire department, lives. Back behind a tumble-down shed on this lot is an apiary where five hives of bees have given him more honey this year than any of the most successful beekeepers in the countryside around has obtained in proportion.

This is how a fireman happens to be keeping bees: One day a report

Fireman Timothy O'Connor, Hook and Ladder Company No. 36, N. Y. F. D.

came to the station house that on a certain hillside in the precinct where a house still remains, there was a swarm of bees that no one knew what to do with. There was considerable consternation in Hook & Ladder Company No. 36, for versed as it was in the ways of rescuing fair maidens from nineteenth story windows the manual contained nothing at all about what to do when bees swarm. The only man in the station who remembered anything more about bees than that they sting was Fireman O'Connor. When he was a boy he lived in Ireland. His father kept bees there.

He racked his brain a good while conjuring up the long-ago days in Ireland when he helped his father. Finally he remembered that if he put a comb of honey in a hive and placed the hive near the bees the queen might go into it, and if she did the colony would most surely follow.

He was despatched to the hill house, where his early training stood him well. In due time the bees crawled after their queen into the decoy hive.

"There," said Fireman O'Connor, to the lady of the hill house. There is a nice swarm of bees for you. Where shall I put them?"

"Take them away!" she cried in terror, "I'm scared to death of them."

It was then that he thought of the vacant lot next to the apartment house where he lived and remembered that wild clover grew companionably among burdocks and tin cans. So he went home and took the youngest O'Connor out of the baby carriage, explaining matters as well as he could in his haste. That night the O'Connor family gathered behind the tumble-down shed to foretaste the honey that was to come from the little plot beside the great apartment house and much less than half a block away from the elevated trains.

That was four years ago and was, of course, but a beginning. Now there are five hives sitting in a row

on the vacant lot. Each one of them has come a similar way. The strongest colony of all was the result of a call from Fordham Road last year, where a swarm was frightening nursemaids. Children on their way to school had dangerous fun throwing sticks at the swarm and then running away from the angry bees. Sometimes they escaped, more often they did not.

By this time the "bee catcher" of the New York Fire Department had established his reputation and he was sent for. This time he took his decoy hive in his car. When he arrived at the scene he found that the swarm was high up in an exceedingly tall tree. In order to entice them he was forced to build a scaffolding of boxes and boards on the top of his car. In due time that swarm, too, was safely hived and was borne to take its place with the remaining four.

It has covered itself with glory—perhaps I should have said honey. This season it presented the fireman with seven gallons, a feat sufficient to cause professional beekeepers with acres of potential honey around their apiaries to seriously contemplate bringing their hives to little lots in the shadow of the elevated. The other hives averaged four gallons each, making 23 gallons in all for the summer's work.

What the six O'Connors can't eat, the father sells for 35 cents a half pint. Before the excess supply is gone he will have netted close to $100, for although he does not solicit customers, there are many who "happen to hear about it," as Mr. O'Connor puts it.

Since the day when he trundled the first colony home in the baby carriage, Mr. O'Connor has considered the care of his bees as recreation. They are a relief from his extremely arduous duties at the station house. The day I saw him he was worn and nerve-strung from a night of fire-fighting. It had been the first cold night of the year and the usual epidemic of fires followed. Unable to relax the next day while off duty he had gone to his bees and was spending hours puttering about them.

"They are such wise little creatures," he said. "I forget all about my troubles in watching them. Every time I come to work about them I learn something new and wonderful. They are more interesting than people, more restful and far more wise."

Mr. O'Connor is attached to the apartment house where he lives. He does not want to leave it. But he is more attached to his bees. So when the time comes, as it surely will, when progress clears out the wild clover patches to make way for other apartment houses, the day has come for Mr. O'Connor to pack up his baggage and move wife, children and bees to the country. He has been in the service almost twenty years and his present term is about completed. Then professional beekeepers will have to look to their laurels, for ex-Fireman O'Connor will go to beekeeping in earnest.

Southwestern Honey Sources—No. 4

Mistletoe a Winter Bee Plant

By Frank C. Pellett.

THE mistletoe is a well-known parasitic plant which attached itself to the branches or bodies of trees. A common old world species has been known for thousands of years and is mentioned in the works of Virgil. The plant figures in the rites of some pagan religions and is much used in connection with Christmas festivities in this country. The thing of most interest to our readers, however, is its attraction to the bees.

The seeds apparently are usually carried by birds, which drop them where they chance to alight. The seed finds lodgement in a crevice of the bark and sprouting attaches itself to the tree much as other plants attach themselves to the earth. It forms a much-branched shrub with a stem six inches to a foot in length and with a bushy top two feet or more across. The leaves are thick, leathery and evergreen.

In south Texas, it begins to bloom any time from December 20 to the middle of February, depending upon weather conditions, and continues to bloom for four to six weeks. On a visit to the Texas Apicultural Laboratory, I found the plants in bloom on January 6. The day was fine and the bees were busy, apparently getting nectar, since they were not seen to bring in any pollen. In that locality most of the mistletoe was found on mesquite and live oak. Farther west it occurs very generally on cottonwood. It is very abundant on cottonwood in the Rio Grande Valley, in New Mexico. It is found as far north as New Jersey, near the Atlantic coast and inland as far north as southern Missouri.

H. B. Parks reports that, when the weather is warm enough for the bees to fly freely, during the period of bloom, they get more than a living from mistletoe, a gain of five to fifteen pounds per colony from this source not being uncommon.

An interesting thing about this plant is that the new bloom and the ripe berries from the old are present at the same time. Some plants had both blooms and berries, but in most cases we found either blossoms or berries. One picture shows a branch with blossom, stems and leaves. The blossoms are mere three-cornered cups, set in thick bands around the stem, at short intervals. They are yellow in color and a casual observer would hardly recognize them as flowers. The honey is light in color, very sweet and of a stringy, gluey texture which

Mistletoe showing ripe berries.

J. H. Lauderdale with arrow-weed on bank of irrigating ditch at Yuma, Arizona.

makes it very difficult to extract. The berries are also extremely sticky and the pulp acts much like mucilege when the berries are mashed.

Since the mistletoe blooms in winter or early spring, it furnishes the bees with fresh nectar and pollen at a time when it is much needed for brood rearing.

It should be added that there are three species of mistletoe in California. The writer has also found the bees working freely upon a leafless mistletoe in Arizona in February.

Baccharis

Along the water courses and dry washes of Texas, one frequently sees clumps of willow-like shrubs which grow to about the height of a man's head. The stems are fine and the leaves are narrow, much resembling willows. In fact, so close is the resemblance that many persons are deceived and mistake them for willows. Eight different species of Baccharis are listed from Texas, and it is apparent that much honey is gathered from this source which is credited to willow. When the blooms appear, the mistake is readily seen, for the flowers have nothing in common with those of the shrub for which it is so often mistaken. As will be seen by the picture, the leaves might easily be mistaken for willows, while the flowers look more like the bloom of boneset.

All the way across the southwest, from Texas through New Mexico, Arizona and California, I found these shrubs in one or more species. One species is sufficiently distinct in appearance to be readily recognized, but, with some, there is the same confusion in all the states named. There are numerous common names. The botanical books give the name "groundsel-tree" as the common name, but nowhere did I find anyone calling any of the species by that name. Guatemote, often pronounced whatemote or water-motor, is the name most often heard. In California **B. viminea** is commonly called mule-fat, while another species, **B. pilularis,** is known as chaparral broom.

In the Arizona deserts there is one with bright green bark which retains the dry flowers throughout the winter and, at a short distance, has the appearance of active growth. A close examination will reveal that it is dormant, the remnants of the flowers being dead and dry and the green bark giving the appearance of summer. This is the desert broom **(B. sarothroides),** which once seen is not likely to be mistaken for anything else. According to Professor Vorhies, this species is the source of fall honey at Tucson.

The writer saw numerous clumps of the willow-like forms which were blooming in February and March, in the vicinity of Yuma, Arizona, and in the Imperial Valley of southern California. Little surplus is reported by beekeepers in that region, but guatemote is valued as an early stimulant over a wide area. **B. viminea,** is reported as blooming for a long period, but most profusely in late summer.

In Texas, H. B. Parks credits large yields of honey in the Gulf Coast region to baccharis. Some heavy yields of amber honey are reported from this source. The fact that few beekeepers distinguish most of the species from the willows probably accounts for the fact that there are few cases where baccharis is mentioned in the beekeeping literature.

Arrow-weed

Along the banks of irrigating ditches and in other moist situations, from west Texas through southern New Mexico, Arizona and southern California, there is another plant of somewhat similar habit. It is of smaller size, finer stem and more weed-like appearance. It has a dusty grey or silvery color and grows in thick clumps, sometimes to a height of six or seven feet. It is commonly

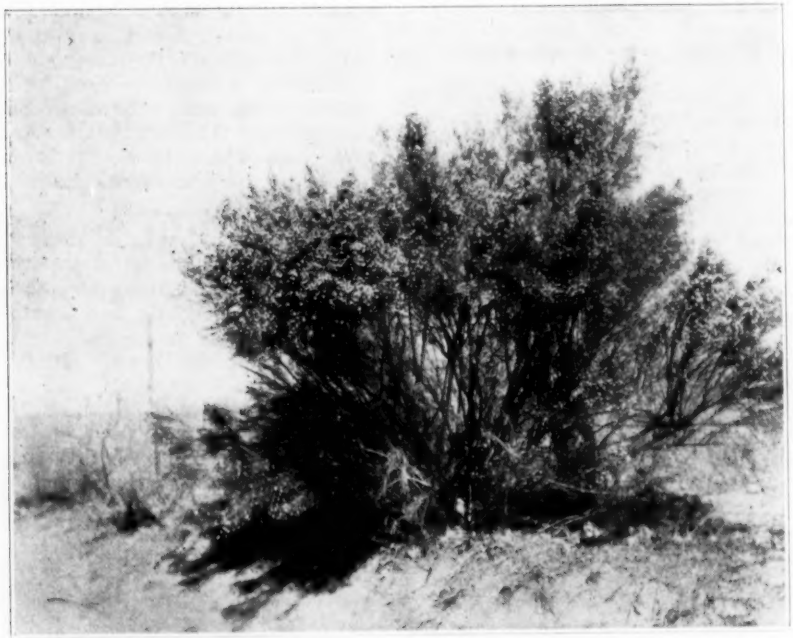
Leafless mistletoe on palo verde tree in Arizona desert.

called arrow-weed or arrow-wood, or by the Spanish name cachinilla. The scientific name is **Berthellotia sericea.** The picture shows J. F. Lauderdale near an especially thrifty clump of arrow-wood, on a ditch bank at Yuma, Arizona.

The stems of this shrub are of a size which is very convenient for the making of arrows, and the Indians formerly used them for this purpose, which accounts for the common name.

In the Rio Grande Valley of Texas and New Mexico, in the Salt River Valley of Arizona, and the Imperial Valley of southern California, I found this shrub highly regarded by the beekeepers as a minor source of honey. Although surplus is sometimes secured, it does not seem to yield enough to be important, except upon unusual occasions. The honey is reported as being of a dark or amber color and of good flavor.

Blossoms and leaves of Baccharis, at Yuma, taken in February.



Clump of desert broom near Tucson as it appears in winter.

Foulbrood and Transferring

By L. H. Dickman.

In Leroy Churchman's article, "Transferring From Box Hives," page 125, March A. B. J., he states, in part: "The bees were then treated the same as we would a foulbrood colony," and then describes his treatment.

I object to his treatment as described in his article. It either fails in giving full instructions or his method is wrong, considered from a foulbrood standpoint, for the following reasons:

He says "the bees were then driven out into the new hive." One would infer that he drove all the bees out of the box hive. "The box hives were stacked three or four in a place, all cracks and entrances were closed except one. They were left this way for three weeks."

In the stacking of brood without attendant bees the unsealed brood is lost and some of the sealed brood may be chilled and lost, but the greatest danger lies in the fact that there is a stack of brood left for several days without bees old enough to protect their entrance from robbers. I admit that the honeyflow was on when the treatment took place when the desire to rob is practically nil, but suppose there are showers which stop the honeyflow before the newly-hatched bees are old enough or strong enough in numbers to be thoroughly organized for protection. What then? A glorious time robbing out box hives supposedly infected with foulbrood.

"We then repeat the treatment and melt up the combs." Did he drive these young bees into a clean hive "on foundation" and start a new colony? If so, there is the possibility of not having a queen with them. As the treatment described took place at the start of the honeyflow undoubtedly the bees in the box hives had made preparations to swarm and sealed queen cells were left to hatch. However, if there were no sealed queen cells in the box hive there could not be a young queen.

Or did he drive these young bees into the same hive where he drove the bees three weeks before.

If he did the former, all well and good so far as foulbrood infection is concerned, but if he did the latter and the box hives were infected, this foulbrood infection would be carried to the new standard hive.

It is not my desire to tear down another man's work or writing, but after having kept bees in a territory where I have, in years gone by, had as high as 85 per cent of my colonies infected with American foulbrood, I naturally dissect every article in which foulbrood is mentioned.

Iowa.

(Most of the above points are well taken, but when we read over Mr. Churchman's article we find that he does not say that any of the bees had foulbrood, but only that "no drawn combs were used for fear some of the bees were infected with foulbrood." Our correspondent is right, however, in insisting that, in case of foulbrood the method would not be safe. It would only do in warm weather with a very plentiful honey crop, with healthy colonies.—Editor.)

What Is a "Selling" Price

A little experience in selling our honey may be interesting. Having over 600 cans of extracted honey, we sought a market at $3.00 a can. We could not find a buyer, so tried a new scheme. We raised the price to $6.00 a can and found two buyers who took it off our hands. They peddle it out again at a profit. Others are now offering us $6.25 for a further crop. It is easier to "sell" your honey than it is to give it away.

Geo. Gordon, Florida.

In Reply to "Do Bees Reason?"

By Prof. A. C. Burrill

Curator, Resources Museum, Jefferson City, Missouri.

I ENJOYED reading Allan Latham on "Do Bees Reason as Human Beings Do?" in the February Bee Journal, and agree with Mr. Latham in his attempt to try to explain the wonderful habits of bees in the simplest and most natural way possible. I do not find objection to the explanation he suggests, since neither he nor I was present to witness the bees. I do, however, feel that some of us should object to the intimation he leaves that Mr. Baldensperger, of France, was wrong in contending that bees reason.

I do not fail to note Latham's playful request that he be allowed to define his own terms. That is where he is throwing dust in the eyes of all of us. I wonder if readers know that the early definitions of reason and instinct were given us by the clericals of the Middle Ages. From my card catalog I could fill much space quoting you different definitions of instinct and reason by important scientists. Instead, I want to say that some of the newer psychologists teach us that it will be better to drop our early ideas of instinct and reason and consider that all animal life shows intelligence more or less. I do not think anyone can find fault with this statement if you believe in a Creator. It is not for you to say whether He should put any intelligence or logical mind into other creatures besides man. That was His business, and we cannot run the world for Him.

Our two best students of the habits of bees and ants, of the older generation, are probably Dr. Auguste Forel, of Switzerland, and Dr. W. M. Wheeler, Dean in Harvard University. These two men's writings show great care not to distinguish too closely between instinct and reason. Over fifty years ago Forel presented as a doctor's thesis the theory that about every attribute to be found in man, including his mind, could be found beginning or in greater or less degree of perfection in some one of the lower animals. Nothing in his later writings shows any desire to deny this. Dr. Wheeler, in his well known book, "Ants; Their Structure, Development and Behavior," says, page 531: "While there has long been unanimity of opinion in regard to the predominant role of instinct in the lives of ants, there is still considerable diversity of opinion in regard to the plasticity or modifiability of behavior in these insects."

Both bees and ants have memory of a certain order, and we have noticed them make so-called trial and error movements when they run into a new situation. Out of these movements memory is often built. When young nurse bees try to co-operate with older bees they often seem to do so by imitating them; but in most of these actions they could have learned in time without imitation, since in their normal actions instinct would have probably come to the rescue.

But there are new conditions which both bees and ants occasionally meet, and of this Wheeler quotes Bergson, page 544: "It is a remarkable fact that the scientific theories of instinct keep oscillating back and forth between the **intelligent** and the merely **intelligible**—that is to say, between the likening of instinct to a 'lapsed' intelligence and the reduction of instinct to a pure mechanism." Wheeler concludes: "It is, in fact, quite futile to attempt a phylogenetic derivation of the automatic from the plastic activities or **vice versa,** for both represent primitive and fundamental tendencies of physical protoplasm and hence of all organisms. As instinct, one of these tendencies reaches its most complex manifestation in the ants, while the other blossoms in the intelligent activities of men." If he had written of the honeybees he might have added that some of us think that the honeybee ranks somewhere between, even though they have no brain organization like a human being. In the latter regard there is still dispute whether the mushroom bodies of a bee's brain act like the cerebral hemispheres of the human brain.

As I see it, leading scientific men will probably side with Latham in trying to fit the simplest interpretation to the habits described, but would have to side with Mr. Baldensperger in admitting that the question cannot yet be settled as to how near the intelligence of bees approaches to that of man. If you were to study the mental tests in the army you would be rather disappointed in the human mind. If you were to study the brain ability of all kinds of human beings, including the lowest savages, you might agree that 50 per cent of the human race today does not show a civilization far above the bee or ant, since they have to go to war whenever they want to increase their wealth, extend their empires, or satisfy some other greed for power. Have you ever read Dr. H. C. McCook's "Ant Communities and How They Are Governed"? It will make you stay awake nights worrying about the future of the white race.

Feeding

Last spring, while helping the Tennessee State Apiarist, Mr. W. L. Walling, move a yard belonging to Prof. G. M. Bentley, of the University of Tennessee, we stopped at a real country store to inspect two colonies which Mr. Walling spied in the storekeeper's yard across the road.

Mrs. "Storekeeper" told us they were her bees, that she didn't know a thing about bees, but had bought them the previous fall, as she "reckoned if other folks could keep 'em, she could too, and she shore was powerful glad we happened along to tell her something about 'em."

We found two colonies in eight-frame hives sitting under an especially built shed scarcely four feet high, and still nailed up for moving, only the entrance block having been removed. One colony had a super of dirty empty sections on, and the other an empty comb super. The frames were unwired and the combs mostly drone. She had paid $12.00 per for them.

The proud possessor came out and watched us open them up. They were nearly out of stores, with freezing weather still on. Mrs. "Storekeeper"—what's in a name, anyway—said: "I don't reckon they're hungry, do you? I put out two sticks of striped peppermint candy for them two or three weeks ago, an' they licked it awhile, but I see they ain't et it all yet, so I reckon they ain't hungry."

M. R. Blood.

Winter Honey Plant from Arizona

Under date of February 4, W. C. Collier sent to this office a plant from Tucson, Arizona, from which his bees were storing surplus honey at that time. He writes as follows:

"This is a peculiar country, freezing at night and a honeyflow in the daytime. Last night we had thin ice and at eleven o'clock nectar would shake out of the combs. Some of my bees have a super of new honey which they are sealing."

This interesting plant from which the Arizona bees were storing surplus in early February is Bladder-pod, the scientific name of which is **Lesquerella Gordoni.** It is a common spring annual with yellow bloom, in west Texas, New Mexico and Arizona. It belongs to the mustard family, a group of plants which furnishes many good honey sources, though some of them are of rather poor quality.

Personal Recollections of the Editor

Combs Breaking Down From Heat

OUR mistakes and failures are just as likely to be useful to us and to others as our successes, provided we have found a cure or a preventive for them. Here is the account of one of the worst disasters in apiary work that I ever experienced:

About 1875, I established an outapiary at the home of an old French gardener, some five miles from our home. This old gentleman had been a market gardener near Paris, where land is worth as much per square foot as it was worth per acre in Illinois at the time of his coming. He had come to Nauvoo, in 1849, with the Icarian Communists, honestly to try their doctrines. Failing in this, as they always do, he had dropped back into individual life, had bought a 3-acre tract of land, built a house and a little barn on it, and was producing vegetables. His house, barn, pasture and a few fruit trees covered 2 acres, and the third acre, pretty rich land on a flat spot, produced from 2 to 6 crops annually, of lettuce, radishes, peas, onions, celery, etc. He and his wife lived comfortably upon the income. He had 4 colonies of bees, built into the south wall of a hot-house, an excellent place to have early swarms and strong colonies, but a difficult place to take care of them. I arranged with him to establish bees of our own there and we placed them along the west edge of a deep ditch, 10 feet wide, which nature had dug in the center of his land and which he had sown into grass to prevent further encroachment on the tillable land. Our 40 colonies grew in two years to about 60, strong and thriving, in our large hives. Crops were good.

In 1877, he and his wife got into the notion of going back to visit the country of their youth, and started for France, after having put their home in care of a tenant. They died there soon after. They were both over 80 years of age.

One fine summer day, in July, in such hot weather as we see in Illinois at this time, I was notified by the tenant that our bees were behaving in a singular manner; he did not know what was the matter, he said. He was very much afraid of bees and could never be induced to go near them. I went and found that about a third of the colonies had had combs to break down from the heat. Some had lost one comb, others two, three or four; but four colonies had entirely broken down, supers and all, and the honey had run out of the entrance and soaked into the ground, killing the grass for two or three feet in front. Of course, the apiary was in an uproar, the colonies that had not been damaged being unable to care for all the wasting honey and the damaged ones being badly smeared, in spite of their efforts to manage the loss.

I had never but once before had any losses of combs breaking down. The isolated case had happened in our home apiary. Our bees were all in the shade through the summer, under forest trees; the one hive in question, during a heavy harvest, had been exposed to the sun, through an opening in the woods, from 12 to 3 o'clock. Its entrance was small and we had ascribed the loss both to the sudden heat of the sun and the smallness of the entrance.

In this outapiary, however, the colonies were in the open, in that ditch, without any shade and with entrances left just as they were in winter, about 8 inches long by about three-eighths to half an inch in depth. The hives had from one to two, and a few three supers, pretty well filled with clover honey.

Did you ever put a little piece of comb on top of a hive, during a summer day, say in June, July or August? Did you notice that this piece of comb readily melted on the hive top? This means that the temperature of the hive top is above 145 degrees, which is the heat required to melt wax.

Did you ever see the bees cluster in front of a hive until the entire front was covered with them? This may happen even during a heavy crop, when the bees ought to be in the fields and would be in the fields if they only could find room in the cells to deposit their honey, or perhaps if the inside of the hive was not too hot for them to stay in.

In our case, the clusters had evidently hung over the entrance, the ventilating bees had been forced to stop their work and the temperature had gone above the holding point of beeswax.

A few years after this accident, we had occasion to revise the "Hive and Honey Bee" of Father Langstroth. There we realized how wise he was to put an emphasis upon "Ventilation." Read that chapter, paragraphs 363 to 374 of our revision, or Chapter IX of the original edition of his book, and you will see that after this occurrence we fully appreciated the point made. We had learned a lesson by dear experience, an expensive lesson, for we had lost over a thousand pounds of honey which had literally soaked into the ground. There, for the first time, I saw bees overloaded with scales of beeswax, which they had produced but could not use, for their hive was flooded.

This lesson served us for later experiences. Since that time, I do not think we ever lost a single comb from breaking down. The following points are to be observed:

1. Keep the hives shaded. If they cannot be placed under trees, for shade during at least the hot part of the day, have some artificial shade for them. We make roofs out of any old lumber, dilapidated hives, old boxes, etc. Each hive is to be supplied with something, if it is only a clump of brush, to keep the hot rays of the July sun from striking down upon it.

2. Have the entrances of your hives as wide as necessary to make the inside comfortable to the bees, so that they will not need to cluster on the outside, except perhaps when there is nothing in the field for them to gather. If necessary, raise the hive from its bottom, in front, one, two, three or more inches, that the ventilating bees may work freely. You must bear in mind that it is not only in front that the ventilating bees are working so hard to secure a current of air; it is all through the hive, clear up to the most remote corner of the second or third, or fourth story, and that the air, thus forced in, must be also forced out on the opposite side, so as to create a complete change of oxygen, so that every bee may breathe pure air, which they need as much as we do. If the circle of ventilating bees is broken for ever so short a time, there is danger of the temperature going above the safe point and of the combs breaking down.

3. There must be room enough for the bees to unload their crop as fast as the honey is brought in. There must be room enough for the queen to breed, else there is danger of their deserting or swarming. All these matters must be carefully looked into, and it is better to sin by too much care and too great an amount of ventilation, shade and room, in hot weather, if the colony is strong. I have emphasized these points so strongly with our apiarists that, at a visit that I made to our outapiaries last year, for criticism, at their request, I found rather an excess of the precautions recommended. But we had no breaking down and no loss.

Whenever the honey season stops, it is well to reduce the entrances,

especially if there are weak colonies. We have, at times, staggered the stories, that is, put one story back an inch or so above the other, so that there might be passage and room for ventilation at the different stories. This is good in very hot weather, but must not be kept up, for the bees withdraw the honey from that part of the super which is exposed, for fear of robbers.

We have also made what I call an improvement, but which we have been unable to get others to adopt. It is the placing of a straw mat over the top of the combs, whether in the brood chamber when there are no supers, or over the uppermost super. This straw mat, the invention of my old gardener friend, who used similar straw mats over his cold frames in cool nights, proves good, summer or winter. In summer it protects the combs, if there is no shade on the hive. In winter it keeps out the cold.

Those gardeners of Paris even use straw mats over their espaliers, peach trees, pear trees, fastened to the south side of a wall, and made to grow into any shape desired. By using straw mats to protect them from the cold of winter, they make sure of good crops of peaches or pears, when the unprotected trees suffer from the rigors of the weather. In our Middle States, I am sorry to say that it would be out of the question to keep espaliers, for the heat of the walls in summer would do as much damage to the trees as the cold of winter.

Introducing a Hog

By J. F. Diemer.

If anyone wants to smile because of the heading of this article, they are at liberty to do so. It is a little out of the ordinary, especially when it is intended to give a thought about bees.

A farmer will tell you that when you turn a strange hog in among the home herd, the whole bunch will get after him with a vengeance, and will kill him if they can, and it takes about a week's time before they will get friendly with him. All this fighting could be avoided if the strange hog was kept on the other side of a wire fence, as we should do when introducing a queen. All animal creation has a fixed and rooted hatred for the stranger suddenly thrust among them. A strange steer turned into the feed lot with the herd has a hard time for a week or more before they will allow him to come to the trough and get a square feed. Horses, chickens, bees, all act alike to the stranger. Animal nature tells us how to introduce queens. Even the lowly hog should not be forgotten when we are studying queen introduction. I could cite several instances where the purchaser of a queen got in front of the hive, pulled the wire screen off, expecting the new queen to run into the hive; instead she took to the air, which was better for the queen. They had not even read the directions. They might get wiser if they would study hogs a little. We talk about the mysterious and wonderful queen and bees as if there was a vast difference between introducing a queen and introducing a horse or a hog. About all the difference I can see, is that the queen is more in the minority, and can't get out of the way like the horse or hog.

And because of this mysterious something, we are told there are a great many ways to introduce queens. Smoke 'em in. Starve 'em in. Sweeten 'em in, and a lot of ways that no doubt will about half way introduce them. A queen half introduced might as well be killed at once. I want it understood that I am talking about queenright colonies. Requeening a colony is different from running queens in colonies that have conditions that made them ready to accept, and glad to get any kind of queen turned in at the entrance. It seems to me that most beekeepers allow queens to be released too soon, especially for their health and usefulness. A queen should be kept in the cage from 4 to 8 days, depending on how savage the colony is, and also on the honeyflow. If there is no flow, of course it takes longer, and if more time is given, it is as good as though there was a honeyflow. Hogs in a fattening pen will get used to a strange hog quicker than a pen of stockers will. For the last two years we have been experimenting on leaving the old queen in the hive so she can go on laying eggs while the new one is being introduced There is some advantages to this plan. There will be no queen cells started; the egg laying goes on; the new queen will absorb the hive odor, or the bees will absorb the new queen odor, or both, if you like, while the bees and queen are getting acquainted with each other. And the most important advantage is that the new queen can be kept caged longer. When she is finally released, in about the same time it takes a bunch of hogs to get acquainted with the new hog, the new queen will be well received and will not lose that beautiful bunch of hair between her shoulders.

Missouri.

Bees Removing Diseased Larvae

In the December number of the American Bee Journal, under "The Editor's Answers," I read the following words, written by "Missouri:"

"One day I noticed that bees would readily lick up the remains of European foulbrood off my toothpick. So I tried them with American foulbrood. And to this time I have never seen one bee that would touch its tongue to this refuse, and always asked the owners and others throughout the state to try it, and none of them ever got one bee to touch it. So, after many years' trial, I have come to the conclusion that it is almost an infallible test."

Touching on the subject matter contained in the above I would like to mention something that I have noticed several times during my experience as apiary inspector in this province.

In examining for foulbrood I have opened the cells containing dead larvæ and picked the larvæ with a toothpick to determine ropiness. Then the comb was returned to the hive and a few hours or even a day or so later, when I looked for the diseased cells I found the bees had cleaned out the diseased larvæ. There is no question about the disease being American foulbrood, because all the indications were present and smear samples were sent to the laboratory of the Provincial Apiarist for microscopical examination and the diagnosis of American foulbrood was confirmed.

I have had the above experience several times and it is a bit disconcerting for an inspector to take the owner to a colony showing only two or three diseased cells and find that the bees had cleaned out the dead larvæ where they had been disturbed with a toothpick. The above was brought to my attention so forcibly that I spoke to other inspectors about it and found that some of them had experienced the same thing.

C. A. Ervin, Ont.

A Book of Historical Interest

W. M. Egan, a beekeeper of Salt Lake City, has rendered a service to those interested in the life of pioneer days in the publication of the diary of Major Howard Egan. Howard Egan was a member of the Mormon expedition from Missouri River to Utah in 1847. The diary gives an account of the journey from day to day and throws many interesting sidelights not only on the life of the early Mormons but on the pioneer conditions of that time. Students of history will find it of special value, dealing as it does with an important period of western development.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

TO KEEP DOWN SWARMING IN DISTANT OUTYARD

Every now and then I read about manipulations for heading off swarming, but in nearly every instance it appears necessary for one to visit the apiary from ten to twelve days after manipulation to complete the job. Now my problem is this: My apiary is located in southern Rhode Island, near the sea, which prevents me from giving it frequent attention until the latter part of June. One visit around the last of May to look over colonies and in some cases add supers is about all I can well manage. This year, on May 24, I found strong stocks with sealed queen cells and others preparing to swarm. I split them up for increase, but what I would have preferred to do would have been to so manipulate them that the stocks could have remained together on one stand and go on building up. (Mine are in two-story hives and the big flow comes in July).

How would the following plan work, do you suppose? About the end of May, when stocks are strong and queen cells are present, remove the colony from its stand and in its place put a new hive with one frame of honey and pollen and one frame of brood with queen cell, filling out with foundation or empty combs. On top of this place excluder and two supers. Over the supers place a screened escape board, on which set the old colony with queen, and all the cells cut out. The flying force would all go downstairs and deplete the old colony and the queen should go on laying. Would a swarm be likely to issue with the hatching of the virgin below? Would it help matters if some brood was put in the middle super to still further deplete the colony?

My question resolves itself into this: Is there any way by which, in a single operation, I can head off swarming in a colony where queen cells are present and keep that colony together on its stand.

MASSACHUSETTS.

Answer.—Entire prevention of swarming is out of the question and no one has ever completely succeeded. But it may be reduced to five per cent or less.

The method you suggest would probably work as well as any for the prevention of swarming. The main objection would be that, the queen being at the top of the pile, the bees would be likely to bring in pollen into all parts of the supers, it being needed where the brood is reared. The Demaree method avoids that.

The swarm prevention method which I recommend, in the "Dadant System of Beekeeping," gives on large lines the main causes of swarming: shortage of room, lack of sufficient ventilation, too hot an exposure, an old queen, many drones. The removal of any one of these objectionable features would not be sufficient to prevent swarming, but if we do away with all of them we will have a condition as near to the total prevention of swarming as it is possible to go. That is my experience based on 55 years of practice. The detail of this is found in both "The Dadant System" and the "Honeybee" of Langstroth and Dadant.

The Demaree system is very good, but, as you say, it requires further operations.

MAKING INCREASE

1. I have twelve colonies of bees and I want to make as small an increase as possible and discourage swarming. To accomplish this, could I take two frames and the adhering bees from each colony, place eight of these frames and bees in each new hive, thereby making an increase of three? Would these bees taken from four hives and put in one start a battle royal? Or, since they would all be young bees, would they make up to each other? If this new colony had a queen cell, would they produce a queen and get along all right? If they did not have a queen cell, but plenty of brood, would they build a cell? If this will work, when will be the best time, and wouldn't this discourage swarming in the colony from which the two frames of brood were taken?

2. I want to move some of my bees about seventy-five feet. How and when had I best do this? Some others I want to move back about four feet and set up on a frame about a foot high. What about making this change?

ILLINOIS.

Answers.—1. The young bees will not fight if the dividing is made at the proper time—that is, when the crop has already begun. Bees may be united without trouble when there is plenty of honey in the fields.

However, I am not sure that you would entirely prevent swarming by taking out only two combs of brood and young bees from each colony. A very good way would be to put the new colony thus formed in the spot occupied by a full colony, placing the latter in a new place. They may be given queens or may be allowed to rear their own queens. In that case it will be necessary to destroy all but one of the queen cells they will build, so they may not swarm with the first queen hatched. It would also be a good plan to rear queen cells from your best colony and use those queen cells on the tenth day after getting them started, making your divisions on the ninth day, so as to leave them queenless 24 hours before introducing the queen cells.

2. Bees will return to the old spot unless you make a great disturbance with them, so they may feel as if they had swarmed. You might move them a foot at a time and thus get them over to the new spot without much loss. When you move them, you might leave one or two of the weakest on the old spot to gather the bees that insist on going back, afterwards moving these last colonies. The loss would then be small. When you move them, place a slanting board in front of each hive to cover the entrance, so that they may know at once that something is changed in the position of their home. They will thus look back when they take flight and a less number of them will be lost.

EARLY QUEENLESS COLONY

I have 5 stands of bees; they are all strong except one that seems to have lost its queen, as I cannot find any eggs or brood, nor can I find the queen. About a month ago, I think, they had brood and young bees, but am not positive, as I did not examine them then. The stand is strong, yet they are bothered with robbers, as are the other bees also. About one week ago I gave them a frame from one of the other hives containing eggs, larvæ and sealed brood, thinking they would raise a queen; today I looked at them but found no queen cell started. I will give them another frame in a few days, one with a queen cell if I can find one. There are a few drones in the hive now. What shall I do to save the stand? Last summer I had a stand that acted the same way. I gave them, several times, a brood frame containing eggs and sealed brood, to no avail. They dwindled away and died last winter with plenty of honey. Can you advise me?

NEBRASKA.

Answer.—A queenless colony in spring is of little value, because by the time it rears a queen, the season is rather too far advanced for her bees to be ready for the crop. Such a colony does not do much better than a swarm made artificially. So, we usually unite it with another colony. However, if you do not wish to reduce the number of your colonies, you may put a division into it, if it does not have a drone-laying worker. Such a worker may hinder the rearing of a queen.

If you wish to save that colony, try to give them two or three combs of brood with all the bees that are on them and perhaps also some young bees shaken in from the same colony. Those bees will see to the rearing of a queen. If you had ordered a queen from some Southern breeder promptly when you found the hive queenless, you might have a good breeding colony by this time.

You speak of robbers annoying them. Perhaps there is some "secret pillage" going on. This quiet robbing, described in paragraph 671 of the "Honeybee," goes on slyly and discourages the colony. It also causes constant hunting on the part of some bees.

I can see no way to do a good job, except to put in what will amount to an artificial swarm.

FAILING QUEENS

I am writing you to ask if you can give me some information about my bees. I have kept bees for a number of years, but there are things that I do not understand. They put in honey well on fruit bloom and now they are working on clover. They seem to be working well; have had a number of swarms, but the most of them go back before I get them hived. What I do not understand is, I have opened a number of the hives; the combs are full of honey but hardly any brood (and no eggs) except drone brood, and I never saw so many drones; it seems nearly one-third of them are drones. They all have queens, but they are not laying.

I had a prime swarm out three weeks ago. They have filled every frame with honey, but not a patch of brood as big as my hand, and no eggs. What brood there is is drone brood. Now can you tell me why so many drones and why the queens do not lay?

MAINE.

Answer.—Very probably the trouble with your bees is that the queens are old and becoming worthless. When a queen becomes barren (and she generally does at the end of a period of heavy breeding) she lays a number of eggs that are not fertilized and therefore hatch as drones, many of them in worker cells.

The thing to do is to replace those queens with young queens. It may prove cheaper to buy the queens from some breeder. If you buy the queens, wait till they are on hand to kill the old queen. A great many people make the hive queenless at the time when they order a queen. This is a mistake and a colony is more apt to accept a new queen when the old one has just been removed.

If you don't want to buy queens, you may raise queen cells by making one good colony queenless, putting their queen in place of a worthless one. Her colony will then rear queen cells. On the ninth day after making the hive queenless, count the queen cells and kill as many queens as you

have queen cells to spare. The next day, insert one of those queen cells in each colony made queenless the day before. Put it right in the center of the brood. You may use a queen cell protector if you wish. I never did, and rarely lost any queen cells.

CHANGING FROM SMALL TO LARGE HIVE

I would like to have you answer the following questions:

1. When would be the best time to put my bees in the large hives. I have some in 10-frame hives but don't like them.
2. How would be the best way to do this?
3. I was told if I did it during the honey season it would lighten my crop; would it?
4. How often should I examine the brood? Does this disturbance do any harm?
5. What do you think of double-walled hives in this locality—western New York? I run for comb honey. NEW YORK.

Answers.—1, 2 and 3. If your bees are in movable-frame Langstroth hives, all you need to do to transfer them is to drive the queen out into an empty box, with most of the bees, then put those bees into the new hives with a queen excluder on top, then put your Langstroth hive on top, with all its combs. If you fill the new hive with foundation, it will not delay their work much, yet it will, of course, lessen the amount of honey. If you wait till spring, you may transfer the combs into the large frames with the brood in the time of apple bloom. If you were running for extracted honey instead of comb honey, those Langstroth hives would serve very well for supers.

4. There is no need of examining the brood very often, unless there is foulbrood in your vicinity. But you must examine the hives in spring at least once to make sure that they have laying queens; it will not disturb them much if you go at it in a practical way and do not leave the hives open more than a few minutes. It is only when the weather is cold that there is danger of chilling the brood. We always examine the combs when we put on supers and during ordinary manipulations.

5. Double-walled hives are good all through the North. If you do not use double walls, you should protect your hives against strong winds in winter.

A NUMBER OF THINGS

1. When you add the extra hive body in the spring, do you put an excluder between them and use the upper story for surplus honey, or do you give the queen access to both hive bodies?
2. What is your opinion of aluminum combs for brood combs? Where can they be purchased?
3. When wired foundation is used, will the bees raise any drones, when full sheets are used?
4. Will dirty, stagnant water hurt the brood when the bees carry it to the hive and give them?
5. I clipped a queen's wings and she tried to sting me. I did not think she would sting. Would she have lost her sting if she had? MISSOURI.

Answers.—1. The answer depends upon what time you add the hive body. If you add it early, for more breeding, you should not use a queen excluder. But if you add it at at the time of the crop, when the harvest bees are raised, you may use a queen excluder. I never added a second body, because I use large enough brood chambers and I always use half stories for surplus. Neither do I ever use a queen excluder, unless it is under comb honey supers.

2. Aluminum combs are good for brood combs in some warm localities, not here.

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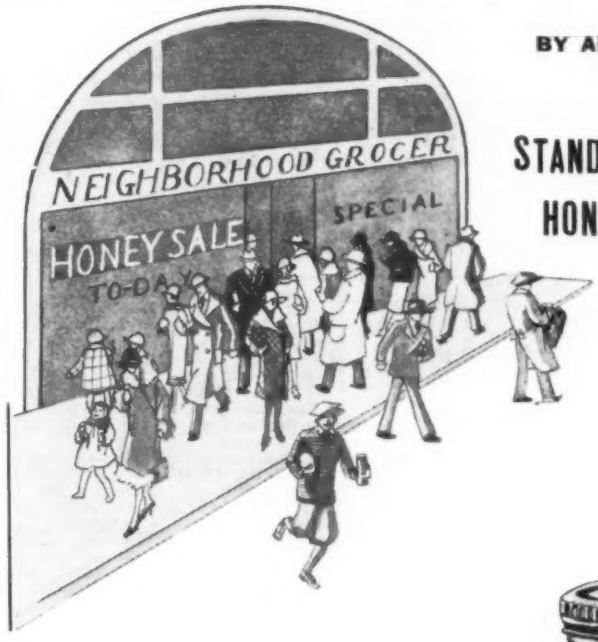

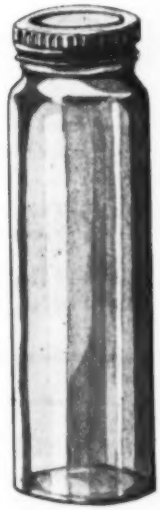

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3. No, not if it is given them at the proper time, when they are ready to lengthen the cells to proper size.

4. I have never seen or heard of stagnant water being injurious to the bees or the brood.

5. I have never seen a queen try to sting, though they may be made to extrude their sting. They sting only other queens, in fight. They may be placed in such a position as to lose the sting, if forced in very deeply, but I never heard of such a thing. I don't know.

DEMAREEING—FOULBROOD—SWARMING

1. Please explain the process of making the candy that should be used in the introducing cages of queens.

2. When the brood is put above in the Demaree method, should it be sealed, or can you risk putting the frames above while the eggs are still visible?

3. Will a queen that has been taken from a foulbrood colony and introduced to a clean colony carry the foulbrood to this clean colony?

4. Most good beekeepers use this method of returning (first swarm) swarms to colonies that they issued from: Put new hive (empty combs) on old stand and place swarm there. Can you tell me just where they place the hive that the swarm issued from, and what they do in regard to the queen cells and brood (in old hive body) in hive that was set aside? Please explain this method. I do not want to increase.

IOWA.

Answers.—1. "Practical Queen-Rearing," by Pellett, gives the following to make queen cage candy:

12 pounds sugar, fine, granulated.
1½ pounds candy-maker's glucose.
1⅓ quarts of water.
1-3 teaspoonful cream of tartar.

Mix cream of tartar and glucose and heat in a kettle with the water. Add the sugar when the mixture comes to a boil, stirring constantly. After the sugar is dissolved, keep stirring and heat to 238 degrees F. Then remove from fire and let cool to 120 degrees, then stir till it looks like a paste, when it is ready to use.

If you have honey that you know is free from foulbrood taint, or that has been boiled without burning it, you may make Scholz candy by adding to it as much sugar as it will take, keeping on mixing and adding sugar till it will take no more. Heating the honey will make it easier to give it all the sugar it can take.

If you have back numbers of the Journal, read page 137, March 1924, page 123, March 1923.

2. If you put the brood above with all the young bees that are on that comb, and you have a queen excluder between the stories, you may put up any brood. It will be all right.

3. We have never known of a queen carrying it, but there is some danger, especially with European foulbrood. Avoid using a queen from a diseased colony.

4. The method you mention does not return the swarm to the mother colony, but puts it on the stand of the old colony, with the old colony in a new spot. It only does away with the possibility of secondary swarms.

About the only way that may be fairly successful in returning a swarm is to hive it in a new hive, keep it 48 hours, then return it by shaking the bees in front of the old hive. The theory is that the old queen, during the excitement, manages to destroy the queen cells, or, if there is a young queen hatched, they have a fight and one of them is killed. This method succeeds almost invariably with secondary swarms.

RAPID SPRING DWINDLING

I want you to tell me why I am losing all of my queens. I find the colonies with some brood that seems to be ready to hatch; no queen, a laying worker, one to ten eggs in the cells; bees dwindling down to nothing. The cause is a mystery to me; never saw anything like it. Well, I won't need any supplies this year; have empty hives and combs to let. What is the best way to take care of my empty combs?

TENNESSEE.

Answer.—The cause of your losses must be in old queens, which the bees did not replace in time although it is customary for bees to rear young queens when the old ones begin to show signs of old age.

There may have been some spring dwindling also, on account of the long drawn out winter and cold weather into March and April, instead of a steady winter and early spring. When the bees suffer from spring dwindling sometimes the queens suffer also, and some of them die. I would urge you to replace your queens as soon as they have gone through their second year of breeding, although some queens will be excellent in their third year, but this is an exception.

Your empty combs are valuable. You must preserve them in a dry place and keep them away from the moths as well as from rats or mice. Put them in a dry room, well piled up in hives, until you can use them. Burn some brimstone under the pile of combs once in a while, taking good care not to have the heat of the burning brimstone too close to the combs. Those combs will be valuable to make increase, as that is the biggest labor of the hive. You can make divisions so much faster when you can give the bees empty combs, but you must give them only as fast as they can take care of them.

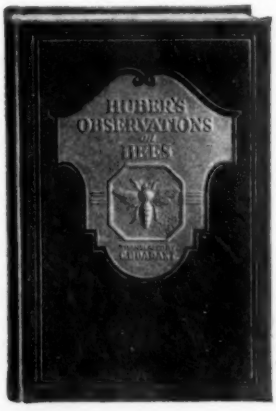
CANTALOUP SPRAY DANGER

There are lots of cantaloups being raised here and there is some kind of insect on the vines, and the owners are spraying them with some kind of poison powder. I would like to know if there is any danger of the honey being poisoned from it, as the bees are working on the blooms.

ARKANSAS.

Answer.—There is but little danger of the honey being poisoned by any spray, as the danger is to the bees, which would probably be killed before they brought any poison home.

However, there is great danger of the latter happening, and the melon growers are as much interested as the beekeepers in not killing the bees, for the melons absolutely need the agency of insects to fertilize the blossoms. You know that there are male and female blossoms on the vines, about two to four inches apart. If there were not bees or other honey-gathering insects, to go from the male blossom to the female blossom, carrying pollen to fertilize the bloom, there would be no fruit at all. This may be proved by covering some female blossoms with mosquito netting. Then the pollen cannot be carried to them and the fruit will not form. So I advise you to talk the matter over with your fruit growers, in case the bees are being poisoned, and urge them to use a repellent like "Black Leaf 40" to spray the vines.



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THE BEEKEEPERS LOOKOUT

THE NIGHT WATCHMAN

Near the writer's apiary for several years there lived a family of screech owls. I had put up a box about eight inches square and two feet deep, with a round hole near the top about four inches in diameter. In the bottom there were about three inches of chipped cork, secured at a fruit store. This kept the box dry and supplied a nesting place for the birds. So pleased were they with this box that others were put up also, and when Mother Screech Owl was hovering her brood, Father Owl had a box to himself.

On cloudy days one or both the birds would spend hours with their heads at the hole, calmly watching my actions as I went about my work. After sundown they would fly out and make timid visitors shudder with their weird calls.

Since the owl swallows its food whole and later throws up the waste material in balls, it is easy to keep check on what they are eating. The greater part of their food consisted of insects and mice. It was surprising how many mice they caught, and the piles of bones and fur under the boxes grew as the months passed. They were comical little birds and became so tame that I have lifted the mother from her nest with my hands without her taking flight. In the book "Our Backdoor Neighbors" I have told in detail the story of this family of birds, along with numerous other wild creatures which were content to share our grove and orchard.

Since mice are a constant bother about the beehives by getting inside and exciting the bees in winter and gnawing stored combs in summer, these little birds were rendering a service which was greatly appreciated.

Frank C. Pellett.

Transferring

By T. E. Babcock.

Many ideas have been expressed about transferring of bees from a tree or hive to a frame hive. I have transferred several from both. Last spring I found, in trying to place the comb in position so that the queen would not lay her eggs in the old comb, that if the cell was placed vertically the sealed brood hatched out and no more brood was started therein.

Last May, I bought eight colonies in variegated colored houses that looked like a little bee city. A Polish man had owned them and made the houses, inside and out, of boards with sawdust two inches thick between and heavy tar paper outside: the roofs were slanting and covered also with tar paper. The hives opened by the roofs coming off at the eaves, and the frames ran crosswise of the house, about ten inches long over all and from twelve to fifteen inches deep, according to the time the owner had made them. In the body part of the house there was room for about fifteen frames, and about eight of these filled with combs, honey and bees. The bees well knew the color of their house, and if drummed out and the queen placed in a new hive on the old location and the entrance of the old hive set at right angles, a few feet away, in a very few days the queen would be nearly alone in the new hive.

I got rid of the large old houses by taking out the frames and plac-

ing them in a Modified Dadant hive and carrying the old houses away. But when I tried to get the bees onto the Modified Dadant frames and save the brood in the old combs it was not so easy. If the queen was placed in the lower hive body on foundation with queen excluder above and the old frames above that, the queen spent all her time worrying on the under side of the excluder and the bees all their time on the old comb. There were only two ways that I could successfully get these bees off the old combs, save the brood and keep them building up. One was to stack all the brood on a strong colony or two and place the queen and bees on new foundation, then later on return some sealed brood. This involved considerable work, as the frames were odd in size.

The other way was to place a frame of the Dadant wired foundation between two other frames of brood in the hive and when two or three frames were nicely started with sealed brood place the queen upon one and put these frames in the Modified Dadant hive body and fill the remaining space with other frames and full sheets of wired foundation. Then place the old comb in a horizontal position, that is making the comb cells vertical over these new frames. The result was that the queen would not lay in the old combs but would increase the brood in the new frames. Then as soon as the brood came out take the old frames away and save the honey and melt up the combs. This latter way did not involve as much work and kept the colonies with their own bees.

I have never seen it stated that a queen would not lay eggs in a vertical cell, but this was the result with me when there was some nectar coming in. I also tried a queen excluder above the new frames, but this caused odor by the drones dying above the excluder.

Connecticut.

Clover Seed Prices for 1926

Inasmuch as red and alsike clover seed stocks are considerably below normal and prices are higher than normal, the production of these seeds might well be increased. On the other hand, stocks of sweet clover and alfalfa seed are much larger than normal and prices generally lower. The attention of farmers who wish to sow alfalfa or sweet clover for hay, pasture, or soil-enriching purposes is called to the fact that an ample supply of good seed is available at prices that are the lowest since 1822.

—March 1, Illinois Crop Reporter.

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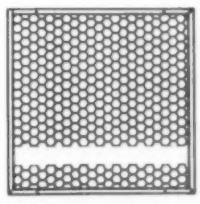

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Boys and Bees

By Otis Crane.

Bee clubs are of recent development in vocational work of this state. For many years we have had Corn Clubs, Pig Clubs, Poultry Clubs, and even tried a Rabbit Club, but the first Bee Club that I have heard of is only two years old.

My experience in club work has extended over twenty years; in fact I was an extension man when club work began. I have had boys in every kind of club from the Beef Steer to the Potato Club, but I have never had any more interest manifested or better work done in any club than in the Bee Club.

When a boy begins to learn the habits of bees and that he can handle them without much danger of being stung, he considers himself a hero and is anxious to learn more and put into practice the new things as fast as he learns them. My Bee Club boys read more books and bulletins, talk to one another more, and ask more questions than any other club members. Another thing that appeals to a boy is that he does not have to ask his father for a tract of land to cultivate or for barn room for his stock. Even a town boy can find a place to set a stand of bees and, if he likes the business, he can find a place for an outapiary. They like the idea of not having to provide pasture, and to know that their bees are giving and taking for the good of all.

The past season was the poorest honey season for years in this section of Indiana, but in spite of that our Bee Club has the following report to make:

A membership of seven boys with a total of 13 colonies of bees. (We had difficulty in securing bees last spring). By fall they had increased to 18 colonies. The 13 colonies cost the boys last spring $86.30. Extra equipment and supplies bought during the summer cost $97.48. They produced $96.90 worth of honey, and the bees and equipment at the end of the season were worth $144.25. They estimated their labor to be about $20, which would leave a profit on thirteen colonies of $35.36. Not a large profit. Some of these colonies lost money. But when you consider that some of the colonies had to be transferred from box hives, and some were requeened, and the kind of year and that the boys were without experience, it is not so bad a report.

The most remarkable thing of all is that these boys want to continue in the club, and twelve of the class of eighteen freshmen want to join the club.

Indiana.

Important to Minnesota and Wisconsin Beekeepers

Save money by ordering Lewis and Dadant goods at factory prices from Winona, Brainerd or Graceville, Minn.

We buy in car lots and ship same day order is received.

Wired foundation and slotted frames is the greatest invention of several years. We like rush orders.

Standard Lumber Company

WINONA, MINNESOTA, GRACEVILLE, MINNESOTA, AND BRAINERD, MINNESOTA

Forehand's Three-band Italian Bees and Queens

are leaders in honey getting, gentleness and beauty. They have been bred for the highest qualities for 38 years.

Untested queens, 1 to 11, $1.00; 12 to 25, 85c; 25 to 99, 80c.
Select untested queens, 1 to 11, $1.25; 12 to 25, $1.00; 25 to 99, 90c.
Package bees, f. o. b. Gonzales, Fla., via express:
1-lb. package of bees with queen, $3.00; 10 packages and up, $2.75.
2-lb. package of bees with queen, $4.50; 10 packages and up, $4.00.
3-lb. package of bees with queen, $5.75; 10 packages and up, $5.25.

100 per cent live delivery and perfect satisfaction guaranteed in United States and Canada. Descriptive circular and prices on lots of 100 or more packages of queens upon application.

N. FOREHAND, Gonzalez, Florida

Buyers of Bee Supplies

will find us particularly well equipped to supply your needs in

Hives, Supers, Frames, Sections and Root's Foundation

All other bee supplies in stock for quick shipments

Let your next inquiry or order come to us

AUGUST LOTZ COMPANY, Boyd, Wisconsin

LEININGER'S STRAIN OF ITALIANS BRED FOR BUSINESS

Beginning June 1st, we will sell queens from this famous strain at the following prices: 1 to 5, $1.00 each; 6, $5.50; 12, $10.50; 100, $85.00. Tested, $1.50. Breeders, $10.00 each.

FRED LEININGER & SON,
Delphos, Ohio.

CYPRESS
"THE WOOD ETERNAL"

We manufacture the finest CYPRESS HIVES and carry in stock a full line of supplies. Our prices are lower.

Write for 1926 catalog.

GULF COAST BEE CO.,
Houma, La.

Golden Queens and Banded Bees

Untested queens.....$1.00 each
Tested queens.....$1.50 each
Bees.....$1.50 per lb.
Nucleus.....$1.50 per frame
Bees inspected; free from disease.

J. W. SHERMAN
Valdosta, Ga.

MONTANA & NORTHWEST

Lewis "Beeware," Dadant's Wired Foundation, Woodman Smokers. Cans and Glass Honey Containers
Write for Catalog.
Service. Quality.

B. F. SMITH, JR.,
Fromberg, Mont.

PORTER

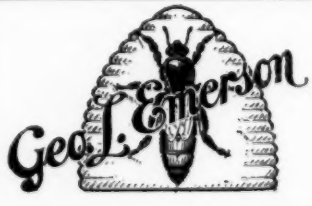
BEE ESCAPE SAVES HONEY TIME MONEY

For sale by all dealers.
If no dealer, write factory.

R. & E. C. PORTER, Mfrs.,
Lewistown, Ill., U. S. A.

(Mention Am. Bee Journal when writing).

BOOKING ORDERS
for high-grade three-banded Italian bees and queens; 2-lb. package with select untested queen, $4.50; discount on quantity. Select untested, $1.00, $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each.
J. ALLEN, Catherine, Alabama



MANUFACTURER BEE SUPPLIES
of quality. Western buyers can save by asking for quotations.
428-30 So. Hewitt St.,
LOS ANGELES, CALIF.

Meetings and Events

A Root-Langstroth Memorial Meeting

The Ohio Beekeepers' Association extends to all persons in the United States and Canada, who are interested in bee culture, a most cordial invitation to attend the meeting that will be held at Medina, Ohio, September 21, 22 and 23.

This meeting will be in memory of Rev. L. L. Langstroth, inventor of the movable-frame hive, which is the foundation of all modern apiculture; also in memory of Mr. A. I. Root, student of Langstroth and his methods, whose efforts did so much to put his invention before the world. Although both of these men lived in Ohio, their fame has gone wherever bees are kept, and we ask you, therefore, to join us in this commemoration of two great pioneers in the field of apiculture, in a meeting that will be of international interest.

An honored guest at the meeting will be Mr. C. P. Dadant, editor of the American Bee Journal, who has kindly accepted our invitation to speak at the Langstroth memorial service. Mr. Dadant and his distinguished father, Mr. Charles Dadant, were chosen by Mr. Langstroth to revise his book, "The Hive and Honey Bee," when the condition of his health made it impossible for him to undertake the revision himself.

The memorial services will be held on Tuesday and Wednesday afternoons. The other sessions will be devoted to general beekeeping topics, and some very advanced things are being planned for the evening entertainments. More details will be given later, but this is not too early to begin making plans to attend.

Automobile parties are being arranged in several states to make the pilgrimage together, and signs will be furnished to put on cars indicating that the "Trail's End" is at Medina. Ohio is noted for its splendid system of highways, and tourists will find paved roads almost all the way to Medina after reaching the state line. There will be free camping grounds for those who wish to bring their own equipment, and rooms will be reserved in private families at reasonable prices. Local arrangements will be in charge of representatives of the A. I. Root Company and the Kiwanis Club of Medina.

Florence Naile, Secretary.

Orange Man President

We learn from Farm Bureau News that Roy K. Bishop, the well-known beekeeper and orange grower, of Orange, California, has recently been elected president of the Farm Bureau of his county. We are glad to see honey producers active in the affairs of the Farm Bureau, since there is much benefit to be derived from association with that organization.

Parcel Post Honey Shipments Ruling

The following letter from Mr. W. H. Riddell, general superintendent, Division of Railway Mail Service, Postoffice Department, Washington, D. C., will be of interest to those beekeepers who ship honey by parcel post:

"The postmaster general has referred to this office your letter of December 30, concerning the shipping of honey by parcel post. You refer to some postoffices accepting honey in five-pound friction-top pails, packed in double thickness corrugated cartons, while other postoffices require such parcels to be crated.

"Honey is considered a liquid and must be shipped in water-tight containers. Friction-top cans are not considered suitable containers for mailable liquids. They are accepted, however, under certain conditions. Cans holding one gallon or less must have the top of the can soldered on, or sufficient absorbent around the can to absorb all liquid in case the top should come off. When honey is prepared for mailing in this way, the double thickness corrugated cardboard box referred to should be used as the outside container. If the quantity shipped exceeds one gallon, it is dispatched outside of mail bags and the absorbent material and the soldering may be omitted, but the can must be crated or some other means used to keep the top on and the honey from escaping."—(Mich. Bks. Letter, Vol. 7, No. 10.)

Ontario Honey Producers, Ltd., Is Succeeding and Growing

Ontario Honey Producers, Ltd., marketed cooperatively this year approximately eight million pounds of honey. Most of this was marketed in Canada, as only about one-half million pounds went to Europe.

Some of the outstanding features of this cooperative association are:

1. Members can obtain an advance on their honey crop from local banks because it is contracted to the cooperative.

2. The cooperative has standardized the containers and labels.

3. The honey is placed in tin containers by the beekeepers themselves, so that the product is ready to go to market at once, and the association is not dependent upon the bottler or blender.

4. The association went out on

the market and hired a high salaried business man in the person of Mr. A. G. Halstead for manager. Mr. Halstead is not a beekeeper. He is a seasoned business man with wide experience in merchandising. It would stagger our beekeepers to know the salary Mr. Halstead receives, but the Ontario beekeepers know from experience that he is a cheap man to them at the price, and that the low salaried manager might be the highest priced manager.

Ontario Honey Producers, Ltd., is giving to its members a price for their honey materially in advance of what they formerly received.

New York State

"Beekeeping News," May 1926, comes from Professor R. B. Willson, Extension Specialist, of Ithaca. It is very newsy. A short mention is made of the Corn Sugar Bill, urging beekeepers to protest against it.

It reports winter losses of New York State as about 20 per cent. It mentions the importance of **quantity** and **quality** of winter stores. That is where many stumble, whether their bees are wintered in the cellar or out-of-doors. Twenty per cent is too great a loss.

It appears that the Department of Farms and Markets is publishing posters to inform fruit growers of the proper time to use poison sprays. That is a very good thing, in order to benefit both the fruit grower and the beekeeper.

Many important matters are discussed in three pages. The beekeepers of New York State should see that they are on the list of the "Beekeeping News."

Organization in Idaho

The beekeepers in Idaho have organized. Tentative organization of the beekeepers and honey producers for the district which extends from Bliss to Minidoka was recently effected at a meeting in Twin Falls, Idaho.

R. D. Bradshaw, of Buhl, was elected president and C. H. Stinson, of Twin Falls, was elected secretary and treasurer.

The state meeting of all interested in the honey producing industry will be held at Twin Falls, July 5, it was announced.

A. B. Kjosness, Idaho Commissioner of Agriculture, addressed the meeting and defended his action in modifying for the present year the quarantine against California bees. This action has created considerable criticism, at least by implication in the meeting, as it was held that the California inspectors in many instances were inefficient, and it was charged that in consequence colonies with foulbrood had come into Idaho. It is denied that there is any great spare bee pasture in Idaho.

The reason for modification, as stated by Mr. Kjosness, was that many beekeepers from Idaho have a habit of wintering their colonies in California. They were down there when the order went into effect, and where properly inspected, he felt, should be allowed to return. Then others had been in the habit of moving bees here to pasture every year, and had many investments, and he thought they should be given a fair

Three-Banded Italian Queens

One, $1.00; six, $5.00; twelve, $9.50; one hundred, $75.00.

For quality—service. Everything guaranteed. Try Taylor Apiaries, Lock Box, Luverne, Ala.

NORTHERN PACIFIC — YELLOWSTONE PARK LINE

PRODUCTIVE LAND — crop payment or easy terms. Minnesota, North Dakota, Montana, Idaho, Washington or Oregon. The leading states of the Union in per colony honey production are located in Northern Pacific territory. Free literature. Mention state. H. W. BYERLY, 98 Northern Pacific Ry., St. Paul, Minn.

Beekeepers' Supplies for 1926

Begin the season right. Order early and get good quality of hives, sections, three-ply foundation, etc. We carry A. I. Root Co.'s make of supplies in stock, such sizes and styles that are mostly used by the average beekeeper. Orders filled promptly. Beeswax wanted. Send for free catalog.

J. NEBEL & SON SUPPLY CO.,
High Hill, Montgomery Co., Mo.

CAUCASIANS CARNIOLANS

Beekeepers! Have you tried the hardy Caucasian bee? They are very prolific, very gentle, and the best of winterers. Little inclined to swarm, and as disease resisters and honey producers, they have no superiors. A WORLD'S RECORD of 616 one-pound sections of honey is the achievement of a colony of Gray Caucasians. We offer queens from the best imported and home-bred strains, bred for honey production. A trial will convince you!

CARNIOLANS are equally as thrifty, winter admirably and build up in the spring with great rapidity. We have the famous Kofler and Ambrozic direct imported strains, as well as our own selected stock.

We have a circular ready, which gives you more information on the above. May we send you one?

W. A. HOLMBERG, Ceres, Calif.

2-LB. PACKAGE BEES

Satisfaction Guaranteed.
No deposit.
Booking orders now.
$2.50 each. Queens $1.00.

Ohmert & Son, Dubuque, Iowa

THe Honeybee A Complete Text on Beekeepieg

By Langstroth and Dadant

In English, "The Honeybee"; in French, "L'Abeille et la Ruche"; in Spanish, "La Abeja Y La Colmena." 450 pages. Over 200 engravings. Cloth binding Price $2.50

This book was written by L. L. Langstroth, the Father of modern beekeeping and originator of the movable frame hive. His work forms the basis for our present beekeeping methods.

Later Langstroth entrusted his book to Charles Dadant for revision and publication. It is now edited by C. P. Dadant. It has been revised several times, being now in the 22nd edition.

AMERICAN BEE JOURNAL, Hamilton, Illinois

QUEENS that are QUEENS
Get RUNNING'S Queens and Get
HONEY

Prices for June delivery as follows:

1 choice untested Italian queen	$ .90
6 choice untested Italian queens	4.80
12 choice untested Italian queens	9.00
1 choice tested Italian queen	1.75
6 choice tested Italian queens	9.00

All queens sent from Sumterville, Ala.

Address

DAVID RUNNING, Filion, Mich. or Sumterville, Ala.

chance, since they had received no previous warning.

It is reported that some of those present objected to the bringing back of the bees, on the ground that the foulbrood pest remains dormant a long time and cannot be detected

The Dadant Memorial Meeting

Plans are being rapidly completed for the joint meeting of beekeepers from Illinois, Iowa, Minnesota and Wisconsin, to be held at Platteville Wisconsin, on August 17 to 20. Mr. N. E. France has made complete arrangements for a camping site and dining facilities.

The program is being especially arranged so that August 17 will be Wisconsin day, August 18 Minnesota day, August 19 Illinois day, and August 20 Iowa day. This meeting should prove to be very interesting to all of the old and new friends of Mr. C. P. Dadant, not only in the states listed, but in many other states, and we are looking forward to a big attendance and a splendid general get-together for the beekeepers from all over.

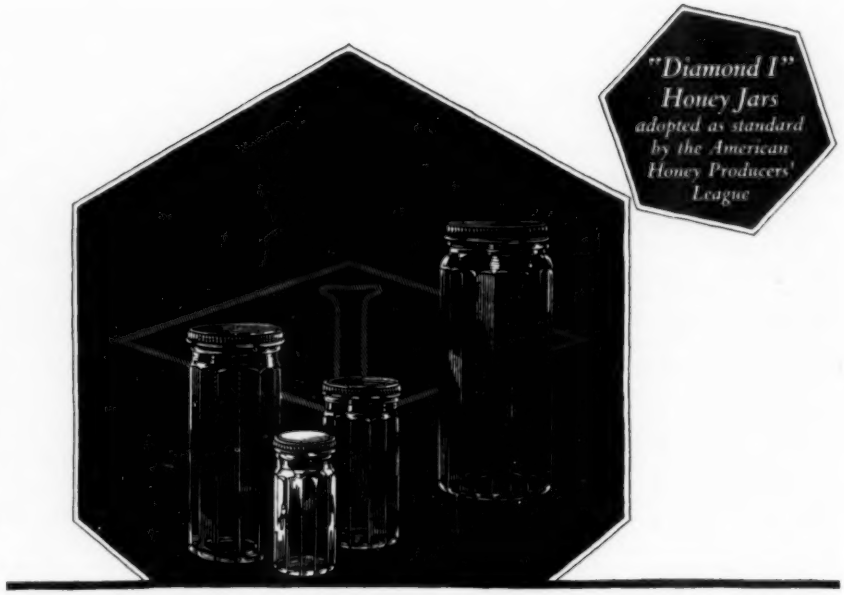
Further details of this meeting will be given in the July American Bee Journal. A special meeting for apiary inspectors, of which Dr. Fracker is to be in charge, will be called for Friday, August 20, for the purpose of studying uniform inspection laws and also to give those visitors who are interested an opportunity to get better acquainted with the general system of apiary inspection.

H. F. Wilson.

This is the regular summer meeting of the Wisconsin Beekeepers' Association, following plans arranged last year.

Summer Meetings in Michigan

The executive committee have arranged for summer meetings of the Michigan Beekeepers' Association at Port Huron, August 12-13, and at Boyne City, August 18-19. Outside speakers and elaborate programs will be prepared for both of these meetings. Ontario beekeepers will be invited to attend the Port Huron meeting, and we have already been promised by Professor F. Eric Millen, Apiculturist of the Ontario College at Guelph, that he will be present and appeaer on the program. Being located in a heavily populated beekeeping section of the state and with the prospect of having many Ontario beekeepers present, the Port Huron meeting should be well attended. And since it has become a custom for beekeepers from the southern part of the state to take their northern Michigan vacation trip at the time of the summer meeting, doubtless the attendance at the



Now! Individual Honey Service

The newest addition to the "Diamond I" line of Honey Jars is the attractive two-ounce individual service size.

The same fastidious public that welcomed cheese, grape juice, preserves, etc. in individual services offers a ready-made and eager market for your honey in this convenient package.

The new two-ounce jar is packed in handy corrugated fiber reshipping cases containing three dozen; also in wood crates holding six dozen.

"Diamond I" Honey Jars, in two-ounce, one-half pound, one pound and two pound sizes are distributed by Colorado Honey Producers' Association, Denver Colorado: Dadant & Sons, Hamilton, Illinois: G. B. Lewis Company, Watertown, Wisconsin: Albany, New York; Texarkana, Arknnsas; Sioux City, Iowa; Lynchburg, Virginia; Texas Honey Producer's Association, San Antonio, Texas: A. G. Woodman Co., Grand Rapids, Michigan.

Established 1873

Illinois Glass Company - - - Alton Ill.

"Diamond I" Bottles

QUEENS

Big men are headed with good hats, just as big hives are headed with good queens. We claim to produce as good a queen as is required. High priced queens don't mean anything, but low priced queens are useless.

We guarantee every queen we ship; if she fails to keep up the standard, we will replace her immediately.

PRICES
June 1 to October 15

Untested	$ .90 each	Tested	$1.00 each
Select untested	$1.00 each	Select tested	$1.25 each
Breeders	$5.00 to $25.00		

Note: We make no reduction for quantity, as we take same pains with a large order as small one

GEO. A. HUMMER & SON, PRAIRIE POINT, MISSISSIPPI

Boyne City meeting will also be large. Please note these dates and plan on finishing up the extracting season in time to attend. Further details will be announced later.

Manitoba Beekeeping

A very interesting bulletin, No. 78, published by the Manitoba Farmers' Library, written by A. V. Mitchener and L. T. Floyd, is on our desk. It gives a short description of the natural history of the bee and instructions on beekeeping. An interesting account of the average crops of Manitoba, in honey, for the past five seasons, shows that those northern countries are not behind our United States in production. Here it is: Pounds per colony, 1921, 118; 1922, 126; 1923, 156; 1924, 85; 1925, 150. These crops are mainly due to sweet clover. The bulletin may be had from the Publications Branch, Department of Agriculture, Winnipeg, Manitoba.

Canada Honey Goes Abroad

L. T. Floyd, Provincial Apiarist of Manitoba, sends us a clipping from a St. Johns, New Brunswick, paper which has an extended article concerning a big shipment of Ontario honey that was then at the docks in that city for shipment to England. It required twenty-two freight cars to carry the shipment to the seaboard. The statement is made that at one time there was 600,000 pounds of Ontario honey in transit at that point. Our Canadian friends are developing an export market and have organized a cooperative marketing organization which controls a large part of the honey crop of the province.

Washington Production Not So High

In our last issue, we stated that the honey production in 1924 in Washington was 16,000,000 pounds. Mr. B. A. Slocum, Extension Specialist, calls our attention to this error and that it should read 6,000,000 pounds instead of 16,000,000. This is still a very heavy production and shows that the Washington beekeepers are active.

The Oregon Meeting

The Oregon State Beekeepers' Association announces the date of its next meeting for December 2, 3, 4, 1926, at Dallas, Polk county, Oregon.

The state association and the Umatilla County Beekeepers' Association sent a protest against the Cole Corn Sugar Bill, to Washington.

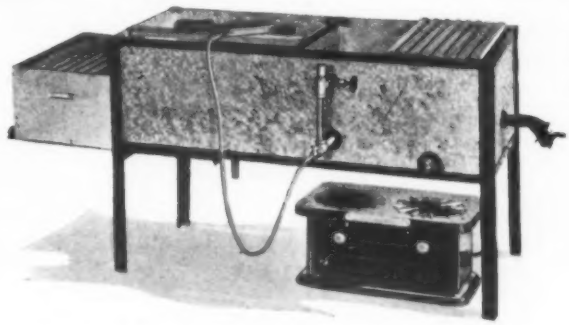
No More Permits for Bees on Comb to North Dakota

No more permits will be issued for bees on th ecomb or used beekeeping

JUNE QUEENS 60c EACH

Untested, one grade, 1 to 24, 75c each; 24 to 49, 65c each; 50 or more, 60c each.
Tested, $1.50 each. Extra select tested, $3.00 each.
Carefully raised from good breeders.

D. W. HOWELL, Shellman. Georgia



THE IMPROVED SIX-IN-ONE UNCAPPING STAND

1. Uncapping Stand
2. Steam Generator
3. Separates Honey from Cappings
4. Melts Wax
5. Liquefies Granulated Honey
6. Heats for Bottling

The 6 in 1 has been on the market for over two years. It has proven its success. Some improvements have been made in construction and material. The price of the Standard 6 in 1 is $38.00 f. o. b. Center City. A large 6 in 1 for large apiaries has been added to the line. Write for new folder giving complete details of both machines.

The 6 in 1 Uncapping Stand SAVES: SPACE, LABOR, HONEY, MONEY.

BERQUIST MFG. CO., Center City, Minn.

Please mention this paper when writing.

ALBINOS

are the most beautiful bees you ever saw—virtually sheiks in the bee world. Their white fuzzy coats are very luxuriant. Albinos are extremely gentle, very prolific, and as honey gatherers they are unequaled.

It is a remarkable fact that these bees do not hybridize. They retain their individuality. In this region they are found in many small, neglected apiaries in their purity. Having been neighbors for many years of black bees and Italians, they prove to the world that they do have the ability to keep themselves pure and uncontaminated.

We have had these bees in our yards for over twenty-five years and have found them to be better bees in every respect than any Italians that we have ever tried. I have the original stock of the noted beekeeper who perfected them over forty years ago.

Try a few of these queens. I know you will be pleased with their appearance, the character of their workers and their wonderful capacity as honey producers.

I am prepared to furnish Albino queens at the following prices: Untested, $2.50 each; dozen lots, $2.00 each. Breeders (limited number), $15.00 each.

Send for circular. Order early. Orders filled in rotation as received.

Sterling Nusbaum, Taneytown, Carroll County, Maryland

Use Hutzelman's Solution

The best Disinfectant for American Foulbrood.
Now is the best time to disinfect combs for spring use.
For full information ask your dealer, or write to

DR. J. C. HUTZELMAN, Glendale, Ohio

(Patented October 14, 1924.)

A Customer Talks:

"Last year we handled two lines of cans and pails, yours and those of another manufacturer. We had a lot of trouble with the pails we had been using, because of the ears pulling off. But, we are happy to tell you, we did not have a single complaint on yours.

"Your service was wonderful, indeed, and we hope that we may have the pleasure of turning you our business as long as we are in business."

Further Reasons Why You Should Use Wheeling Cans

Extra strong construction; combination one-piece ear and top; bright, clean appearance; cans that **make** good. Friction top syrup and honey cans, packers and wax top cans, lard cans, five-gallon square cans. Packed in convenient shipping containers, you need them in Wheeling quality to take care of your needs.

Put your needs up to Wheeling.

WHEELING CAN COMPANY
WHEELING, W. VA.

Root Quality Italian Queens

QUEEN PRICES TO JUNE 15

Quantity:	1 to 9	10 to 24	25 to 49	50 to 99	100 or over
Untested	$1.50 each	$1.35 each	$1.25 each	$1.10 each	$1.00 each
Select untested	2.00 each	1.80 each	1.70 each	1.55 each	1.45 each
Tested	2.50 each	2.25 each	(Note: The price of tested queens does		
Select tested	3.00 each	2.70 each	not change throughout the season).		

QUEEN PRICES AFTER JUNE 15

Quantity:	1 to 9	10 to 24	25 to 49	50 to 99	100 or over
Untested	$1.20 each	$1.00 each	$ .90 each	$ .80 each	$ .75 each
Select untested	1.50 each	1.40 each	1.20 each	1.10 each	1.00 each

	1 to 9 pkgs.	10 to 24 pkgs.	25 or more pkgs.
2-pound package of bees	$5.00 each	$4.50 each	$4.00 each

THE A. I. ROOT COMPANY, Medina, Ohio

ARE YOU ASKING—

HOW SHALL I SELL MY HONEY?

The answer is easy! Beekeepers are fast learning that the best market is the home market. Honey packed in attractive containers sells best.

Build up your local market. Decorate your grocers' shelves with rows of your choice honey neatly marked with your attractive label

If you do not find a stock label in our catalog (it will be sent upon request) which meets your needs, send us your ideas and we will put them in color.

We also furnish stationery, business cards, selling helps, show cards, in fact all the printing need of the beekeeper.

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

Bright American Beauty Italian Queens

High Grade Queens only $1 each
4 or more 75 cents

Most prolific strain in America. Safe arrival and satisfaction guaranteed

TUPELO APIARIES, Apalachicola, Florida
J. L. MORGAN, Proprietor

equipment to come into North Dakota, according to a recent ruling of the State Commissioner of Agriculture. This ruling takes effect on July first.

A Langstroth Memorial

What does the work of Langstroth mean to you? Beekeepers have never united in expressing their appreciation of the wonderful help which has come to all of us through the labors of the Reverend L. L. Langstroth, inventor of the movable-frame hive, and student of bees. The Ohio Beekeepers' Association at its summer meeting in 1925 established a memorial to this great leader and former resident of Ohio in the form of an Endowment Fund in the Cornell Beekeeping Library, Cornell University, Ithaca, New York. It seems undesirable to limit a memorial to such a leader to the beekeeping of any one state, and the undersigned committee volunteers to provide opportunity to other beekeepers to unite in this expression of thanks for the work of a great master. We, therefore, invite beekeepers everywhere, without distinctions of political boundaries or otherwise, to send individual or collective contributions for this fund in any amount which they may wish. The fund raised will be used exclusively for the advancement of the industry for which Langstroth labored with such marked devotion.

We have too long waited to show to what degree we appreciate the work of this great man. A memorial suitable to Langstroth should not be a granite pile, but be something which will go on working for the advancement of beekeeping for all time. This is a project on which all beekeepers can co-operate and a strong, united action for this purpose will do much to further the unity of beekeeping. Details of the plans of the Library may be obtained from Cornell University and further details of the establishment of the Langstroth Memorial Fund will be announced from time to time. Contributions may be sent to the Chairman or to the editors of the American Bee Journal or Gleanings in Bee Culture, and will be acknowledged through these journals.

The sum of $182.40 has already been paid into the Langstroth Memorial Fund and pledges for an additional $100.00 have been received. It is urged that all interested beekeepers take this matter under consideration at once, for the committee does not contemplate conducting a long campaign for this purpose,, as we believe it will be neces-

sary only to offer an opportunity to beekeepers to do what each one doubtless feels that he personally wishes to do. Contributions in any amount will be welcome and as great liberality as possible is requested. What would beekeeping be today without the movable-frame hive?

What does Langstroth's work mean to you?

Florence Naile, Chairman, Secretary of the Ohio Beekeepers' Association, 118 West Northwood Avenue, Columbus, Ohio.
James I. Hambleton, U. S. Dept. of Agriculture.
W. D. Achord, Fitzpatrick, Ala.
Grace Allen, Nashville, Tenn.
C. P. Dadant, Hamilton, Ill.
George S. Demuth, Medina, Ohio.
E. F. Phillips, Ithaca, New York.
George H. Rea, Reynoldsville, Pa.
E. R. Root, Medina, Ohio.
Dallas Lore Sharp, Hingham, Mass.

Contributions paid into the Langstroth Memorial Fund to date are as follows:

Ohio Beekeepers' Assn.	$105.00
Dadant & Sons	50.00
Eastern Massachusetts Society of Beekeepers	14.40
Florence Naile	13.00
Total	$182.40

Florence Naile,
Chairman of the Langstroth Memorial Committee.

Weird Coffee Recipe

French coffee, Turkish coffee, Russian coffee, all have had their vogue amongst those who are constantly seeking the bizarre; but in "All About Coffee" we find a recipe which should be weird enough to satisfy anyone's taste. It is "Judge" Walter Rumsey's "new and superior way of making coffee" as given in 1657.

You must "take equal quantity of Butter and Sallet-oyle, melt them well together, but not boyle them. Then stirre them well that they may incorporate together. Then melt therewith three times as much **Honey** and stirre it well together. Add thereunto powder of Turkish Cophie, to make it Electuary."

Butter, salad oil, honey, and coffee mixed!—Exchange.

Afraid to Look in the Hives

In some countries, the beekeepers claim that foulbrood is propagated in hives because the beekeepers who own movable-frame hives "open them too often." Baldensperger, in his review, compares the people who hold that opinion to an Arab to whom he offered to show an eclipse, by the use of a smoked glass: "No, I don't want to look into your glass, I might get to believe that you are telling the truth."

A spoon now's the price of a swarm;
They ought to make good, if it's warm.
So give them a queen,
for success it will mean,
And they'll give you no further alarm.

FOR that swarm you catch, of course you want one of our high-grade queens. Also for any colony whose queen is not top-notch. Then, too June, is the month to divide your colonies and make increase. Our catalog explains the best methods of doing this.

Write for it. You will like our queens

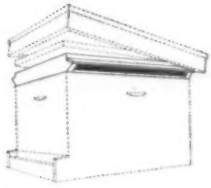
Prices for June:

1 to 4, inclusive, $2.00 each; 5 to 9, inclusive, $1.95 each; 10 or more, $1.90 each. After July 1, 1 to 4, inclusive, $1.50 each 5 to 9, inclusive, $1.45 each; 10 to 24, inclusive, $1.40 each; 25 to 49, inclusive, $1.35 each; 50 to 74, inclusive, $1.30 each; 75 to 99, inclusive, $1.25 each; 100 or more, $1.20 each. Breeding queens, our very best, $10.00 each.

JAY SMITH, Vincennes, Ind.

Route 3

BEFORE HOT WEATHER—
NOW IN FACT—



Write for booklet and trial offer

Order your **Heim Bee Ventilators** and have them on hand before the hot weather and expect greater results from your bees. More honey per colony when you use the **Heim Way** of ventilating.

HEIM BEE VENTILATOR CO., Three Rivers, Texas

RUDDY'S

3-Ply Airco Comb Foundation

"The Strength is in the Comb"

Guaranteed not to sag or warp. Makes possible the greatest number of worker cells for brood combs. Gives the maximum of strength for extracting combs.

The newest and the best. Customers' beeswax made up.

Write for Prices

Exclusive Canadian Makers

Ruddy Manufacturing Co., Ltd.
BRANTFORD, ONTARIO

SEASON 1926

Pacific Citrus Honey Company

Office 221 Chancery Building, 564 Market St., San Francisco, Calif.

Apiary at Woodlake, Tulare County, Calif.

QUEENS—Three-banded Italians

1 mated, untested, $1.00; 6 for $5.50; 7 to 15, 80c each; 16 to 50, 75c each. Over 50, 70c.

PACKAGE BEES

In two-pound packages only.

1 to 10, $2.50; with queens introduced, at $3.50
10 to 100, $1.85; with queens introduced, at $2.60

Package bees are shipped in extra large two-pound cages. Large orders will be given a lower quotation.

Terms: 10 per cent with order, balance before shipment.

The Secret of Success

is good young Italian queens. I have them as good as money can buy. I have doubled my output for this season and have room for more customers, so I am offering the following prices that I may add your name to my list of satisfied customers:

One select untested Italian queen, 75c; six for $4.00; twelve, $7.50; one hundred, $60.00.

Your order will not be too large for me to handle, or too small to be appreciated. Pure mating, safe arrival and satisfaction guaranteed on every queen. Health certificate with each shipment.

P. M. WILLIAMS, Ft. Deposit, Alabama

INCREASE YOUR PROFITS

BY BUYING

Bee Supplies at Right Prices

We have special prices for buyers of large quantities and will save you money on your supplies.

We make a specialty of manufacturing hives, bodies, supers, frames, sections and shipping cases.

Our motto is: "SATISFACTION GUARANTEED or Money Refunded."

It will pay you to let us quote you on your requirements before placing your orders.

Write for our 1926 catalog.

A. H. RUSCH & SON COMPANY
REEDSVILLE, WIS.

JENSEN'S QUEENS

Bright Three-Banded Italians

JUNE

65c each
IN HUNDRED LOTS

"OUR PRIDE," the best we know how to produce, and that is one thing we do know how to do. With the package season out of the way, our every attention will center in our queen yards.

Having again enlarged our yards, we will be able to fill all orders promptly.

We guarantee: Freedom from disease, pure mating, safe arrival, prompt service, and satisfaction.

Prices for June

Untested, 1-25, 80c each; 26-99, 70c each; 100 and up, 65c each.
Tested, $1.25. Breeders, $5.00.

Jensen's Apiaries, CRAWFORD, MISS.

28 FRAME RADIAL EXTRACTOR

Most efficient design on the market.

Write for circular to

S. F. Hodgson & Sons

New Westminster, British Columbia.

IOWA QUEENS

Italians of SUPERIOR quality. Queens are reared in strong cell-building colonies and mated in strong nuclei.

1926 PRICES

Untested	1, $1.15; 5 or more, $1.00
Select untested	1, $1.40; 5 or more, $1.25
Tested	1, $1.65; 5 or more, $1.50

All queens shipped in long distance cages. Pure mating, safe arrival and satisfaction guaranteed or money refunded.

VALLEY APIARIES, Lamoni, Ia.
ORIN STANLEY

Package Bees

QUALITY — SERVICE
None better at any price.
Illustrated circular free.

VAN'S HONEY FARMS, Hebron, Indiana

Crop and Market Report

Compiled by M. G. Dadant.

For our June Crop and Market page, we asked reporters to answer the following questions:

1. What percentage of winter losses?
2. Condition of surviving colonies compared to last year?
3. Honey crop prospects?
4. What per cent of the old crop will be carried over?

PERCENTAGE OF WINTER LOSSES

Without exception, the eastern half of the United States, as well as the southern sections, are reporting a very much larger loss of bees than in 1925. In fact, in many instances, the loss is what we might call extremely heavy.

This is applicable especially, of course, to the smaller beekeepers who do not use modern methods of wintering, nor take the usual precautions to see that young queens and plenty of stores are available before winter sets in.

However, there was an extremely prolonged winter in most northern sections, and even the strongly packed bees and the cellar-wintered ones got very uneasy before settled weather came.

Nor does winter loss cover all the loss, because of the fact that after bees came out of winter quarters, the weather was so extremely uncertain as to cut down largely on the amount of brood rearing.

As a result, there was a considerable amount of spring dwindling, which is still going on in a number of sections due to the fact that cool weather still continues at this date (May 15th).

Perhaps the heavy winter losses may account for the fact that practically all queen and bee breeders in the South are flooded with orders, and the situation is made more acute from the fact that the queen breeders also have not had satisfactory weather for rearing queens and bees, and as a result have had to delay orders sometimes, with a great deal of criticism from customers, whereas the weather was entirely to blame for such delays.

With the extremely backward spring in the North, however, we do not believe that these delays in shipment have seriously hurt the purchaseh of such bees. At any rate, it is a condition which cannot be avoided by the breeders, and the purchaser should take this matter into consideration before being too severe on the shipper.

Northern Vermont reports loss of 50 per cent, as do some sections of Maine, because of honeydew in winter stores.

Losses generally range from 7 per cent to as high as 30 to 40 per cent, with unprotected bees.

In the western half of the country, as well as in California, conditions are entirely different. Here the winter has been unusually mild and bees have gotten through in very excellent shape.

The spring vegetation also came on very nicely, and as a result, the bees are in better shape than a year ago, and we might say, are much better than normal.

CONDITION OF COLONIES AS COMPARED TO 1925

As reported above, the condition of colonies cannot be equal to that of last year in the eastern half of the United States, because of the fact that bees came out in such poor shape and also because the spring has been so backward.

However, the last two weeks have seen a remarkable change in condition of colonies, if the situation around us here is any criterion.

There has been an extremely fine fruit bloom this year, with a heavy fruit set, and this has resulted also in a quick pick-up on the part of colonies of bees.

In fact, colonies in many instances, have spread their brood too rapidly on account of this flow of nectar, and have increased their surplus stores with a rim of fresh honey from fruit bloom.

There has possibly, fortunately for the beekeepers, been a slight letup in the fruit bloom flow, because of cooler weather, or likely the stronger colonies would have gotten ready for swarming before the beekeeper noticed it.

In the intermountain territory, and in the extreme west, bees are in excellent condition.

The same is true in the South, although the delay on account of cool weather has held the bees back from making the usual early honey crop.

Texas reports considerable dwindling from backward weather, but bees usually in good shape and prospects good for later flows. There has probably been a rather excessive loss from spring dwindling in north Texas. South Texas is now reporting excessive swarming.

CROP PROSPECTS

The prospects generally in New England are almost equal to 1925.

In the balance of the East, however, and in the central west, it is doubtful if crop prospects in any locality really equal those of last year, with possibly the exception of Wisconsin, and some sections of Michigan and Indiana. Indiana, as you will recall, had a poor crop last year.

Generally, in most sections of the white clover regions, white clover has not come through the winter in very good shape, owing to either of two factors, that is, a dry, open winter or winter killing of clover.

The plains area comprising the states of Nebraska, Kansas, and the Dakotas, until recently, have been very deficient in rainfall. This has meant the destruction of most of the white clover plants, but recent rains have fortunately fallen, and have almost assured that sweet clover, as well as alsike, will come along in good shape. There is no need, therefore, to fear any danger to future prospects because, the drought has been broken.

In the intermountain territory, as stated, prospects continue very good.

In California, although the rain is not all that it might be, still prospects are very much better than they have been for several years, and indications are that California beekeepers will again come into their own as honey producers this year.

The orange flow was small because of rains and cool weather, the nectar being thin and of use more as a stimulant than a heavy honey producer, although, of course, a moderate harvest has been made.

In Texas the early flows have been hurt considerably, also, by the rains, but this, of course, has put later honey plants in the very best conditions and favorable weather should also show good flows in Texas.

HONEY CARRYOVER

In the New England States, there will be very little carryover of honey.

New York has practically disposed of its white honey crop, with probably 40 per cent of the buckwheat left on hand. Some large producers also have considerable white honey.

The Southeast, as well as Texas, New Mexico and Arizona, have very little carryover of honey, not enough to worry the beekeepers.

The central western states also are in very much better condition than reported last month, although Minnesota, Wisconsin and Michigan are big carryover states, the percentage probably running as high as 20 per cent of the 1925 crop on the average.

There seems to have been a fairly good cleanup of honey in the plains areas, reports coming in recently of several carload shipments from the Dakotas, as well as from western Iowa, which in some instances is now importing honey to supply the demand.

In the intermountain territory, practically all of the comb honey is disposed of, but there are still a number of carloads of white honey which are being held.

Washington also has a considerable carryover of honey, totaling probably 20 per cent. California has very little carryover, except of honey shipped in from the intermountain territory. Utah reports several cars of honey on hand.

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is free from disease or be accompanied either by a certificate of inspection from an authorized inspector or agreement made to furnish such certificate at the time of sale.

BEES AND QUEENS

ELLISON'S three-bands get the honey. Queens $1.00 each, $9.00 per doz.
C. G. Ellison, Belton, S. C.

JUNE QUEENS 60c each. See my display ad, this issue.
D. W. Howell, Shellman, Ga.

GOLDEN Italian Queens for 1926. The big, bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each, 6 for $5.00, 12, $10.00; $75.00 per 100. Tested, $2.00 each. Safe arrival guaranteed.
E. F. Day, Honoraville, Ala.

SALIDA APIARIES sell only one grade of queens, the best light Italians. Our breeding stock the best obtainable. Prices right, $1.00 each; 6, $5.50; 100, $75.00, after June 1st.
Salida Apiaries, Salida, Calif.
T. L. Nicolaysen, Prop.

NORTHERN BRED ITALIAN QUEENS—Untested, $1.00; tested, $1.50. Give them a trial; they will do their own advertising. For sale commencing June 15.
Benson Bee Line Apiary Co.,
Box 393, Galena, Ill.

"JAY SMITH" strain of queens for sale. To be delivered after June 15, $1.00 each.
J. C. Hester, Taylorsville, Miss.

OUR BUSINESS IS BEES—We handle all small orders promptly the day following arrival. A few days required on large orders. Queens, $1.00 each; 10, 90c each; over 25, 80c each. Package bees $1.25 per pound. Lower prices on large orders.
Frank & St. John, Ripon, Calif.
California produces from 10 per cent to 15 per cent of the honey of the United States. Requeen with California queens.

QUEENS BY RETURN MAIL—The package season is over and our two queen yards with more than a thousand nuclei and three experienced men are prepared to care for your queen orders promptly. Why tolerate just ordinary queens when the best queens cost so little? The honey production records of our queens are unsurpassed. 1 untested, 80c; 12 for $9.00. Tested, $1.50 each. Safe arrival and satisfaction guaranteed. No disease. Inspection certificate with each shipment. Write for circular and prices on quantities.
J. M. Cutts & Son, R. No. 1.
Montgomery, Ala.

HOW DO YOU DO?—Yes sir, I am a beekeeper and queen breeder in the midst of my 16th successful season. If strong, hustling colonies that produce big honey crops is what you want, then head your colonies with my select untested queens. We ship only the best quality and make our guarantee good. Look up my ad on page 304, in American Bee Journal.
P. M. Williams, Ft. Deposit, Ala.

GOLDEN Italian queens, untested, $1.00 each; 6 for $5.40; 12 for $9.60. Tested, $1.50. Select tested, $2.50. Three-banded Italian queens, 1 for $1.10; 6 for $6.00; 12 for $10.80. No disease, safe arrival and satisfaction guaranteed.
Sam Hinshaw, Randleman, N. C.

TRY my Caucasian or Italian queens and be your own judge. Yards inspected lawfully for protection of diseases.
Peter Schaffhauser, Havelock. N. C.

FOR SALE—Three-Banded Italian queens, after May 20, $1.00 each; six for $5.50; twelve for $10.00. Tested queens $2.00 each.
Robert B. Spicer,
Wharton, N. J.

I AM now filling orders for Golden Italian queens that are bred for business and gentleness as well as good color. State inspected, delivered safe. Satisfied customers everywhere. Untested, $1.05 each; six for $5.50; twelve or more, 80c each.
Hazel V. Bonkemeyer,
Randleman, N. C., R. 2.

1000 SCOTT QUEENS—In addition to the queens needed in our own yards we will raise 1000 of the same grade for our customers. We rear our own queens because they suit us better than any we have been able to buy. We raise honey-getters that are of good color and not cross. Ready about June 5. One dollar each or $10.00 per dozen.
The Scott Apiaries,
La Grange, Ind.

BRIGHT three-band Italian queens with special introducing cage. See display ad for prices.
J. F. Diemer,
Route No. 3, Liberty, Mo.

SIMMONS QUEENS—Golden and three-band, ready now. One, $1.25; six, $7.00; twelve, $13.00. Two-frame nucleus, $4.50; three-frame, $6.00.
Fairmount Apiary, Livingston, N. Y.

PACKAGES WITH QUEENS INTRODUCED will save time and loss in both bees and queens. Our queens are of the best Italian stock and are introduced and ready for business upon arrival. Also queens alone. We never have had any disease in our yards. State inspected. Satisfaction guaranteed.
A. O. Smith, Mt. Vernon, Ind.

MY famous three-banded, leather-colored Italian queens, April 20 and May, $1.25, six for $7.00; after June 1, $1.00 each, six for $5.00.
J. W. Romberger,
3113 Locust St., St. Joseph, Mo.

GOLDEN Italian queens, untested, 1 to 5, $1.00 each; 6 to 11, 90 cents each; 12 or more, 80 cents each. Tested, $1.50. Select tested, $2.50. No disease, safe arrival. Twenty years a breeder. Satisfaction guaranteed.
D. T. Gaster, R 2, Randleman, N. C.

PURE ITALIAN QUEENS—Untested $1.00; tested, $1.50; 2-lb. package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies.
Birdie M. Hartle,
924 Pleasant St., Reynoldsville, Pa.

HOLLOPETER'S "Bred for Business" untested Italian queens, light three-banded stock, ready June 1; $1.00 each. Write for circular. J. B. Hollopeter, Rockton, Pa. Commercial queen breeder continuous from 1911.

ITALIANS—Strong, hardy, vigorous. None better, few equal. Untested, $1.00; tested, $1.25. No disease.
Chas. W. Quinn, La Belle, Fla.

LATHAM'S "She-Suits-Me" untested 3-banders, $2.00 per queen from May 15 to June 5. After June 5, $1.00 each. Packages and nuclei. Introduction insured. Send for circular.
Allen Latham, Norwichtown, Conn.

FULLY NOURISHED Honeytime Queens.
Ransom M. Bliven. See page 313.

SEASONABLY reared, high class Italian queens at popular prices. Write for circular. R. V. Stearns, Brady, Texas.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 22 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificate goes with queens. Prices: Untested queen, $1.25; 12 untested queens, $12.00; 1 breeder, $10.00.
Emil W. Gutekunst,
Colden, N. Y.

FOR SALE—Golden Italian queens. One untested queen, $1.00, ready for mailing about May 20; one tested queen, $2.00, ready June 20. Satisfaction guaranteed. When orders cannot be filled in six days, money returned, unless otherwise ordered.
J. F. Michael, R. No. 1,
Winchester, Ind.

MY QUEENS prove to be queens of quality, and still they cost you no more. Write for prices. R. V. Stearns, Brady, Texas.

GOLDEN QUEENS, producing bees yellow to tip and improvement over last year's raising, untested, $1.00; 6 for $5.00. Tested, $2.00. Satisfaction guaranteed. Print your address.
H. G. Karns, Victoria, Va.

FOR SALE—Italian queens. Untested, 1 to 10, $1.00 each; 11 to 25, 85c each; more than 25, 75c each. Tested, $1.50 each. Satisfaction guaranteed. Ready to ship June 1 to June 10. R. B. Grout, Jamaica, Vt.

GRAY CAUCASIANS, GRAY CARNIOLANS—Purity of race guaranteed. Fifteen years of real breeding and expert selection are behind them. Strong, long-lived, and as producers of commercial honey they have no superiors and few equals. Try them. Untested, $1.50; tested, $2.50; select tested, $3.00 each. Ten per cent off on lots of one dozen. Rates on 100 or more. No disease. Chas. W. Quinn, La Belle, Fla.

GOLDEN THREE-BANDED and Carniolan queens. Tested, $1.00; untested, 75c each. Bees in 1-pound package, $1.50; 2 pounds, $2.50; 3 pounds, $3.25. Safe delivery guaranteed. C. B. Bankston,
Box 65, Buffalo, Leon Co., Texas.

TEN YEARS of experience in breeding queens of quality Goldens, also gray Caucasians. Golden queens: one, $1.25; dozen, $11.50. Gray Caucasians, one, $1.50; dozen, $15.00. Pure mating. Safe arrival guaranteed in United States and Canada.
Tillery Bros., Rt. 5, Greenville, Ala.

BRIGHT ITALIAN QUEENS—One, $1.00; 6 for $5.00 or 12 for $10.00. Write for prices on large orders or package bees.
P. B. Skinner, Greenville, Ala.

FOR SALE—Italian bees and queens, 2-lb. packages of bees with queens, $3.50 each; 1-lb. package with queens, $2.50. Queens bred with the greatest of care.
O. P. Hendrix, West Point, Miss.

LEATHER COLORED ITALIAN QUEENS—$2.00; after June 1st, $1.00. Tested, $2.00.
A. W. Yates
15 Chapman St., Hartford, Conn.

FOR SALE—Italian queens ready May 15. One queen, $1.00; 6 queens, $5.50; 12 queens, $10.00.
W. W. Talley,
R. 4, Greenville, Ala.

FOR SALE

FOR SALE—200-colony apiary, fully equipped for extracted honey production. Located in sweet clover district. No disease. C. S. Engle, 1327 23rd St., Sioux City, Iowa.

300 BEEHIVES, 2-story, 10-frame, top and bottom board, Hoffman frames. Cheap at $1.00 each. Write or call.
Chas. Bohnert, Menfro, Mo.

HAVE 35 COLONIES with supers for sale. Inquire Henry C. Schmidt, R. No. 1, Box 122, Two Rivers, Wis.

FOR SALE—Small apiary, Italian bees, comb and extracted honey equipment. Address: R. Suckow, The Orchard Apiary,
Earlville, Iowa.

100 NEW 7-wire queen excluders.
Van's Honey Farms, Hebron, Ind.

NEW HONEY TANK, 16x28 inches. Price, $7.50. Will trade for Jumbo hives or foundation, or for 4x5 supers.
O. S. Ward, Obion, Tenn.

REXFORD'S Push-in Comb Introducing Cage, automatic, 35c; three for $1.00. If you like so to do, try the rest, then send to Winsted and try the best.
O. S. Rexford, Winsted, Conn.

FOR SALE—About 90 colonies Italian bees in Root standard 10-frame hives, and all supers for extracted and comb honey. Four-frame Root automatic extractor and complete outfit. Certificate of inspection furnished at time of sale. For more information write. George Eickman,
R. No. 2, Appleton, Wis.

FOR SALE—One share preferred stock 7 per cent A. I. Root Co., par value $100. One Winchester repeating rifle, 32-40 cal., octagon barrel, rigid frame, Lyman front and rear sights; all same as new; no use for it here. Am open for offer in bees, honey or cash. Address
W. Parker Smith, Spring Valley, N. Y.

FOR SALE—Two hundred comb honey supers for 4x5x1⅜ sections, complete at 60c each. Twenty comb honey supers for 4¼x4¼x1½ plain sections at 50c each. Two hundred empty 8-frame hive bodies at 40c each. Two hundred queen excluders, 50c each; 100 new Alexander feeders, 15c each; 150 used Alexander feeders, 12½c each. All bodies and supers are dovetailed and in good condition. Geo. H. Frey,
Gen. Del., Cedar Rapids, Iowa.

CHICK PRICES SLASHED—All kinds. Remarkable guarantee. Quick delivery. Catalog free.
Comfort Hatchery, Pleasanthill, Mo.

BEES FOR SALE—Eighty colonies, eight- and ten-frame hives, two hundred comb honey supers. No disease, fine location. Other business prompts selling. Rate $6.00 per hive takes outfit. For particulars write
R. F. Thornberry, Cairo, Ill.

FOR SALE—Cowan honey extractor, No. 17, and Dadant uncapping can. They are in perfect condition.
G. A. C. Clarke, LeMars, Iowa.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn, odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.
Dadant & Sons, Hamilton, Illinois.

FOR SALE—Hubam sweet clover seed, recleaned and scarified. Write for prices.
Dadant & Sons, Hamilton, Ill.

HONEY AND BEESWAX

FOR SALE—Clover honey in new 60-pound cans. Write for price.
Wm. Oliver, Wayne, Neb.

HONEY FOR SALE in 60-lb. tins. Crystallized clover, at 12c lb.; California thistle at 12c lb.; buckwheat at 8c lb. If wanted liquid add 1c per pound.
Hoffman & Hauck, Inc., Ozone Park, N. Y.

FOR SALE—Light amber clover honey in 60-lb. cans. Priced right.
A. A. Beals, Oto, Iowa.

FOR SALE—White clover comb and extracted honey in packages to suit. Also northern bred high-grade Italian queens. Write for prices. Jay Cowing, Jenison, Mich.

WHITE CLOVER HONEY in 60-lb. cans, 8½ cents. Herbert Kietzer,
Vernon Center, Minn.

FOR SALE—White clover honey in 60-lb. cans. None finer. J. F. Moore,
Tiffin, Ohio.

FOR SALE—500 cases white clover comb honey. Charles Guhl, R. 7, Napoleon, O.

NORTHERN MICHIGAN white honey in new 60-lb. cans. Write for prices.
L. C. House, Stambaugh, Mich.

COMB HONEY—Vermont clover of the finest quality in any quantity.
J. E. Crane & Son, Middlebury, Vt.

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau,
Moorhead, Minn.

FOR SALE—Comb honey at reduced prices. Write, stating your wants.
H. G. Quirin, Bellevue, Ohio.

CHOICE lots of clover honey still in hands of producers. Excellent quality. Few bargain lots. The A. I. Root Company of Iowa, Council Bluffs, Iowa.

FOR SALE—White and water white sweet clover honey; put up in 5-gallon cans. Strictly first-class in every way. Write for prices, stating quantity wanted.
Dadant & Sons, Hamilton, Ill.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Ill.

FOR SALE—Comb, extracted and chunk honey. Prices on request. Samples 15c.
F. W. Summerfield, Waterville, Ohio.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station as you may desire.
Dadant & Sons, Hamilton, Ill.

"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. Q. B. Fromberg, Montana. Beeswax wanted. Write for prices.
B. F. Smith, Jr., Fromberg, Mont.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co.,
217 Broadway, New York.

SUPPLIES

FRAMES—Hoffman brood, $4.20 per 100; shallow extracting, $3.15 per 100. Also special low prices on supers and other supplies, all first quality. Satisfaction guaranteed. Price list free.
Schmidt Bee Supply Co.,
1420-22 Hager Ave., St. Paul, Minn.

LEWIS Beeware and Dadant's foundation. Satisfaction guaranteed. Phone Red 807. Wire, write, or drive in. We like rush orders. Ohmert & Son, Dubuque, Iowa.

ROBINSON'S COMB FOUNDATION will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases.
C. H. W. Weber & Co., Cincinnati, O.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list.
The Colorado
Honey Producers' Association,
Denver, Colorado.

MISCELLANEOUS

HONEY LABELS—Attractive and original Made especially to suit your business. Lowest prices. Catalog free. Liberty Company, Station D, Box 4199, Cleveland, Ohio.

WRITE for special price and catalog on beekeepers' supplies; every article guaranteed satisfactory or money refunded. Ford storage batteries, 11-plate, 6-volt, $10.35. Other car batteries, 13-plate, 6-volt, $11.95. Dodge batteries, 7-plate, 12-volt, $13.80.
F. J. Rettig & Sons,
455-485 W. Canal St., Wabash, Ind.

WILL EXCHANGE pedigreed white Collie puppies for bees or supplies.
W. D. Williams, Box 40, Decatur, Ill.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

WESTERN HONEY BEE, 2823 E. 4th St., Los Angeles, Calif., published by Western beekeepers, where commercial honey production is farther advanced than in any other section of the world. $1.00 per year. Send for sample copy.

EVERYTHING in labels and printing for beekeepers. Send for samples. Lowest prices. Sindelar Printing Co.,
5733 Broadway, Cleveland, Ohio.

GLEANINGS IN BEE CULTURE, published at Medina, Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is George S. Demuth. Its field editor is E. R. Root. Ask for sample copy.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.
American Bee Journal, Hamilton, Ill.

MAKE queen introduction sure. One Safin cage by mail, 25c; 5 for $1.00.
Allen Latham, Norwichtown, Conn.

WANTED

WANTED—Strong young man of good habits and with some experience, for apiary work and to assist in honey sales. State wages expected. Board furnished.
John Kneser, R. No. 1, Hales Corners, Wis.

STEADY position for two men. State age, experience and wages expected. Extracted honey.
B. F. Smith, Jr. Fromberg, Mont.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering.
Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

Let Grocers Sell Your Honey

By L. H. Cobb.

Those beekeepers who do not have a regular patronage that takes their honey supply, and have only what local demands would take, will find that if it is put up in quart fruit jars the local grocer will be glad to handle it at a reasonable commission. Honey in large cans to be doled out to customers never appeals to grocers, and the regular bottled goods are costly, for the customer gets no value from the container. Fruit jars are worth their cost in any family, and the consumer gets full honey value for his money. The jar is charged for at the regular cost, and sometimes the grocer will be willing to exchange jars, to be returned to you for filling. Not often will this be asked, and I would not advise asking the grocer to do it at all. It has always seemed a waste of money to bottle honey when the container must be thrown away, when pint and quart jars are just as good for the purpose and are a regular standard article used in every family.

New Jersey

We acknowledge receipt of "New Jersey Bee Culture," a four-page leaflet which every New Jersey beekeeper ought to receive, for it is very newsy, and, like all state reports, contains a lot of matter which ough to be known to the bee keepers of the state. Join your state association and get their printed matter. The world is too far along for beekeepers to remain isolated. Elmer G. Carr, of Pennington, is the New Jersey secretary.

1926 Package Bees 1926

Three-band Italians with select untested queens. Our strain is bred for business, and is giving good results in every honey-producing district of the United States and Canada. Hundreds of packages already booked for spring shipment. Safe arrival and absolute satisfaction guaranteed on every package and queen shipped.

Ten per cent will book your order. Write for full particulars and prices.

CANEY VALLEY APIARIES, Yancey Bros., Owners
BAY CITY, TEXAS

"Chrysler's Process Foundation"

takes no second place in comparative tests. It is not stretched in the milling, consequently has more cells to the comb than other processes, made of pure beeswax, and refined without acids. We have ample stock and capacity to supply large or small orders. Satisfaction guaranteed; 35 years' experience. Reference, Bank of Montreal. Manufacturers of other supplies. Send for catalogue.

W. A. CHRYSLER & SON, Chatham, Ont.

WHEN YOU WANT

Bee Supplies or Honey Containers
"AT ONCE"
SEND YOUR ORDER TO
W. R. PERRY CO.

We have a complete stock of Leahy's Standard Bee Supplies. We make prompt shipments. Your order goes out of Omaha on the first train.

We want to send you our new price list on honey containers. Write for our catalog and container list.

W. R. PERRY CO., Omaha, Nebraska
1207 Howard Street
"Our Catalog Prices are Low"

The Last One

This will be our last display ad for the season. We have added many new customers to our list and have received letters from many of them praising our quality and service.

Our prices for the balance of the season are as follows:

Two-pound packages with queens: 1 to 24, $3.75; 25 to 50, $3.50.

Purely mated untested queens: 1 to 9, $1.00; 10 to 24, 90c; 25 to 50, 75c.

VALLEY BEE & HONEY CO. BOX 783 **Weslaco, Texas**

Farmers Need Extractors

By L. H. Cobb.

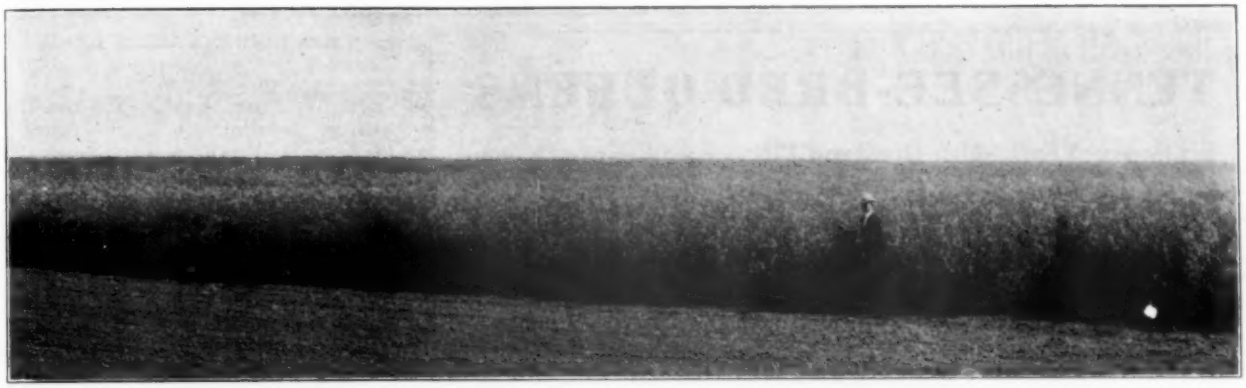
I have seen honey from a good many farm apiaries, and a large proportion was dark and often the comb had been used for brood before being filled with honey. If new comb was built it was often so mixed with wax from old combs as to be really unfit for table use as comb honey. One farmer's wife had nearly a hundred pounds of such honey on two hives last year, and she melted the combs to separate the wax and honey. This is a waste and the honey is not as delicious as if it had been extracted.

The cost of an extractor is more than most farmers like to expend for something they use so little. There is no reason why a dozen farm beekeepers could not use the same extractor, even if they lived several miles apart. Extracting does not demand much time, and it may be put off until a convenient time or be done as soon as the honey has ripened, after the flow. There is plenty of time for the different farmers to use the machine without inconvenience, so why not form an extracting club and buy a good extractor? The expenditure then would be low, and if kept in a dry place it is good for a long, long time.

An extractor is of value for any kind of honey. Even with the nice white combs it will be more profitable extracted and sold as liquid honey. It costs enough more to produce comb honey to take up the difference in price, and extracted honey is more easily marketed. Bees never gather so well in sections, and cut-out comb honey sells but little better than extracted and it takes a lot of honey for the bees to make wax to replace the combs, and if they can refill the old combs they will give a much larger crop, and often will give some surplus when the honeyflow is so slow they would not gather surplus at all if forced to make combs. To get white combs for cutting out we must use a queen excluder or run the risk of having the queen go above, and this is said to slow up the work some, and is not needed if the honey is to be extracted, as the brood will give place to honey later and be just as fine as if no brood had been reared in the combs.

Burying the Hatchet

A southern beekeeper, writing in the League Bulletin, states that the South has "buried the hatchet." We did not know that there was a hatchet to bury, but, if there was one, we are glad it is buried.



IMMENSE ACREAGE OF SWEET CLOVER MAKES NORTH DAKOTA A

BEE PARADISE

North Dakota leads in the production of sweet clover seed. Acreage of sweet clover is increasing rapidly. Many farmers grow it for soil improvement alone; hundreds grow it for pasture and thousands of acres are grown for seed. Following is the acreage grown in 1925 in a group of eastern North Dakota counties:

GRAND FORKS COUNTY	27,053 Acres	RAMSEY COUNTY	24,782 Acres
CASS COUNTY	20,265 Acres	TOWNER COUNTY	18,280 Acres
NELSON COUNTY	16,312 Acres	PEMBINA COUNTY	15,120 Acres

Conditions in North Dakota are extremely favorable for bees; warm, sunny days and cool nights promote a large flow of nectar. It is claimed that honey production is as high as 200 pounds to the acre from sweet clover. North Dakota has a honey-producing season on sweet clover from June until October. Honey of the finest clear quality is produced. In the past five years beekeeping in North Dakota has increased 700 to 14,000 colonies. Bee authorities and experienced beekeepers predict that North Dakota will soon be one of the leading states in bees and honey.

Write for FREE BOOK on the agricultural resources of North Dakota and full information about LOW ROUND TRIP HOMESEEKERS EXCURSION RATES.

E. C. Leedy, Dept. J. { GREAT NORTHERN RAILWAY
St. Paul, Minnesota

ANYWHERE IN IOWA, NEB., S. D., KANS.

"BEEWARE"

IS DISTRIBUTED NEAR YOU

LOOK AT THIS MAP. WHAT DOES IT MEAN?

Nearly every beekeeper in Iowa, Nebraska, South Dakota and Kansas is within the third postal zone of Sioux City, Iowa. This means rapid service and prompt answering of all inquiries.

H. J. Pfiffner	Emmetsburg, Ia.
Harry A. Pease	Shenandoah, Ia.
D. L. Ginger	Langdon, Ia.
H. C. Jones	Marathon, Ia.
L. A. Michaelson	Holstein, Ia.
Bruns Seed Co.	Davenport, Ia.
Orville B. Rogers	Newell, Ia.
G. A. Ohmert & Son	Dubuque, Ia.
J. W. Bittenbender	Knoxville, Ia.
Hamilton Seed Co.	Cedar Rapids, Ia.
Bert A. Brown, Box 421	Des Moines, Ia.
Kennedy & Sons	**Lawrence, Kans.**
B. F. Ogg	Ottawa, Kans.
The Collins Apiaries, E. Sixth Ave.	Emporia, Kans.
Boyd Hardware Co.	Columbus, Nebr.
Farmers Supply Co.	Laurel, Nebr.
L. R. Dillard	Page, Nebr.
Gunn Seed Co.	Lincoln, Nebr.
Johnson Seed Co.	Grand Island, Nebr.
Kearney Hardware Co.	Kearney, Nebr.
Newton Hardware Co.	Orchard, Nebr.
Kuhl Bros.	Randolph, Nebr.
Hayes-Lucas Lbr. Co.	**Madison, S. D.**
E. I. Underwood	**Willow Lake, S. D.**
Lothrop's Nursery	Aberdeen, S. D.
Smith Hardware Co.	Sioux Falls, S. D.
A. F. Cunningham	Armour, S. D.
Dakota Honey Co.	Scotland, S. D.
N. M. Bratton Merc. Co.	Newell, S. D.
Gurney Seed Co.	Yankton, S. D.
F. D. Humbert	Grindstone, S. D.
R. H. Dunbar	Chamberlain, S. D.
W. S. Scott	Monroe, S. D.
M. W. Thompson	Toronto, S. D.
People's Flour and Feed Store	Mitchell, S. D.

(Names of carlot dealers shown in heavy type)

G. B. LEWIS COMPANY 1921 E. FOURTH STREET SIOUX CITY, IOWA

TENNESSEE-BRED QUEENS

Sixty-six Years with Bees and Fifty-four Years a Queen Breeder. Breed Three-Band Italians Only

	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12
Untested	$2 00	$ 8 50	$15 00	$1 50	$ 7 50	$13 50	$1 25	$ 6 50	$11 50
Select Untested	2 25	9 50	18 00	1 75	9 00	15 00	1 50	7 50	13 50
Tested	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
Select Tested	3 50	19 50	35 00	3 00	16 50	30 00	2 75	15 00	21 00

Select tested, for breeding, $7.50.

The very best queen, tested for breeding, $15.00.

I sell no bees by the pound or nuclei, except with high-priced tested and breeding queens.

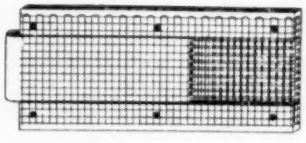
Queens for export will be carefully packed in long-distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, Spring Hill, Tenn.

Dittmer Foundation

We make a **specialty** of **working your wax** into foundation for you, and **now** is the best time to plan for next season. Write us for samples and prices. Our foundation is made of **pure beeswax** only. A full line of supplies. Write us for quantity prices.

GUS DITTMER COMPANY, Augusta, Wisconsin



Bright Three Band Italian Queens

Guaranteed in every way. Every queen a good queen. Introducing cage furnished with each queen. Let's introduce 'em right. Untested, in May and June: 1, $1.25; 6, $6.50; 12, $13.00. After June: 1, $1.00; 6, $5.00; 12, $10; 50 or more, 75 cents each.

Send for price list on bees, tested queens and cages.

J. F. DIEMER, Route 3 Liberty, Mo.

Beekeepers Take Notice

For thirty years we have specialized in the manufacture of **Sections** from the whitest selected Wisconsin basswood

We also manufacture hives, supers, frames and shipping cases

Write for our free illustrated catalog

Marshfield Manufacturing Company

Marshfield, Wisconsin

Reducing Fumes from Formalin

In sterilizing combs with the Hutzelman solution, I have found a kink making the process much less disagreeable than it was before. I use a Root 4-frame extractor to drain the solution, the air draft the reel makes renders it next to impossible to work in the room. My remedy: Made five posts with any stuff, one to one and one-half square sticks about 12 inches long; cut a slit in one end and about 3 inches long and wide enough to slip over over the edge of the can, and fitting so as to stand firmly; take the can cover, or any kind of appropriate stuff, spread it all over, skirts to come down 6 inches or more below the rim; drive a tack on top of each post. Take some fine wire and bind the skirts near the foot of each post, that to prevent the draft of the reel to draw in the skirts. The post in front where you work must be left free of tack and wire so it can be pulled out of your way when handling combs. To keep the skirt down at that post, I have a weight of about half a pound fastened to a wire about a foot long, and having a sharpened hook to take hold in the cloth. In changing combs or reversing reel unhook weight, raise section of cover in front of you, pull up post, and do your work. I also suspended, or raised, the center of the cover with a wire, hooking it and fastened at the ceiling. It made the operation almost agreeable instead of **very disagreeable.** I shall be glad if this can be of some help to somebody else.

A. Mottaz,
Illinois.

What Supers to Use

By L. H. Cobb.

When planning to extract, I prefer the regular full size frame to extracting frames, because they fit the extractor pockets and can be prepared for extracting just as quickly, or nearly so, and more honey is secured. The supers are heavier, but it is not necessary to carry them much, as some conveyance should be arranged anyway, and I always brush the bees off, taking a frame from the super and after brushing placing in another super on the conveyance, keeping covered to prevent bees settling on them.

For cutting out, I like the shallow frames best, and in this case the bees can be cleared out by the use of a bee escape and the supers removed and stored without the frames being removed at all until wanted. It is easier to get the shallow frame fully sealed, and if the last super has unsealed cells there are not so many of them.

WHEN THINKING OF

Honeytime
BRAND

PREPARE WITH FULLY NOURISHED QUEENS FROM PROVEN STOCK, JAY SMITH ITALIANS, ALBINO OR WHITE BEES

Selected as superior among many strains and races; we believe Mr. Smith's introduction of the Queen Alice vitality and other desirable characteristics will so intensify the good points of these bees that all will recognize them as
The Dominant Italian Strain.

All orders filled in rotation as received. Satisfaction guaranteed.

You've always wanted to own bees like these. Good honey-gatherers, prolific and beautiful, they cap their honey white and are remarkably gentle.

Breed them right among your other bees, for Albinos remain pure and have not been known to hybridize.

A new bee that has come to stay. Albino popularity is growing rapidly. Order now.

SELECT UNTESTED *HONEYTIME* QUEENS

	Italians	Albinos
1 to 7, inclusive	$1.40 each	$2.40 each
8 to 14, inclusive	1.25 each	2.10 each
15 to 20, inclusive	1.20 each	2.00 each
21 to 25, inclusive	1.15 each	1.95 each
26 and over	1.10 each	1.90 each

HONEYTIME APIARIES, Sleepy Eye, Minnesota

First Lesson In Beekeeping

By C. P. Dadant

In this volume the author has tried to give the safest guidance he knows to those in their first years of beekeeping. It is intended to answer most of the questions of the beginner, and it seems to have succeeded, as the book has a large sale.

Attractive cloth binding; 167 pages; 178 illustrations.
Price $1.00, postpaid.

AMERICAN BEE JOURNAL, HAMILTON, ILL.

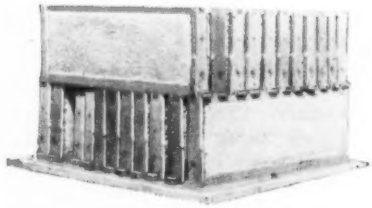
SUPERIOR ITALIAN QUEENS

Sold by the thousands. Backed by the guarantee they must please you
Shipped promptly or advised

To June 15th: Untested—One, $1.00; ten 85c each; One hundred, 75c each
Tested 50c more

After Junc 15th: Untested—One, 80c: ten 75c each; One hundred, 60c each
Tested, 50c more

THE STOVER APIARIES TEL. STATION MAYHEW, MISS. TIBBEE STATION, MISS.



Results like the above, from strong colonies come from giving supers for storage ON TIME. BE READY.

Attention—Iowa Beekeepers

We Are Ready—Are You?

With warehouses stocked and dealers supplied with a full line of Lewis "Beeware" and Dadant's Foundation—the finest line of bee goods made—We are ready to serve you.

GUARANTEED SUPPLIES
QUICK SERVICE
LOW TRANSPORTATION

DADANT & SONS, HAMILTON, ILLINOIS

There is a Lewis-Dadant dealer near you

800 Superior Italian Queens per Month.

Mr. Beekeeper, this is not a large number of queens, but it is enough to head many a good colony during the season. These queens are "reared" and caged by Newton B. Smith, Manager of our apiary, and nothing but the best is allowed to go to a customer.

Our bees are "Bright, Gentle, Three-banded Italians" and are crossed from the bees of several of the best beekeepers in America; this is why we feel that when you buy queens from us you get as good as can be had, and at a very reasonable price.

Write for folder or order from these prices.

We guarantee all bees and queens to reach you in good condition, and to please you in every way. Never had any disease in our apiary, and remember, that our service is always at your command.

Selected queen, 1, 70c; 12, $7.80; 100, $60.00.

W. C. SMITH & CO. Calhoun, Ala.

Burr Combs

Bits of Here and There or Thru A. B. J. with a Critic

By C. L. Swanson.

Did you see that shiny bunch of bees on last month's A. B. J. cover? They must have been some that Cale had treated with his new discovery, patented 1987 (see last month's Burr Combs). This treatment allows the bee to linger on several weeks longer than formerly and it is considered a great boon by those tender-hearted beekeepers who mourn the fact that the bee lives only long enough to gather honey and store it for some smoke puffing giant to steal from the hive—Watt and Cale, for instance.

——o——

You will notice, pleease, that practically three-fourths of the queens advertised in the A. B. J. are "Superior." By Gosh, they acknowledge it!

——o——

Did you notice how cautious the G. B. Lewis Company are? They always seem to be shouting "Beeware." Most people in advertising their goods seem to cajole and say, "Come on, we won't bite." There's much difference beetween "Beeware" and "Beware," and also a difference in beeware.

——o——

Hurrah! Now we have **beautiful** bees. Albinos, the sheiks of Beedom, white and fuzzy, just the thing for the seeker of beauty. Well, they make honey, too, so don't think that they are substitutes for lap dogs.

Star Valley, Wyoming, is coming to beekeeping. Once, when Wyoming was mentioned, I thought of Cheyenne, Sitting Bull, sheep, sage brush, cactus and Pawhaska. Now, with beekeeping so much in vogue, if Sitting Bull was still roaming the country he would have to stand up and take notice of the buzzing bee. Can't you imagine a cowboy, resembling W. S. Hart or Hoot Gibson, corralling bees or branding them during the fall round-up?

——o——

Did you read about Pellett's skunks? I would liked to have had F. C. P. with me th eother night when one of these notorious varmints waved at me from the side of the road. H ewould have been greatly delighted with the "friendliest of our small animals." It would have ranked high with anyone.

——o——

I can't quite understand this idea of making candy from honey. It looks like spoiling good honey to make mediocre candy. Candy and syrup might be considered substitutes for honey. Honey isn't manufactured by man. It doesn't need other mixtures to make it palatable. Cut out a piece of white granulated honey and if you find anything better than this under the name of candy, I'll let you write Burr Combs in my place next time.

If Jay Smith would shave off his bee whiskers we would hardly know him. It would be like coming unexpectedly upon a bathing beach in midsummer.

——o——

A. G. Woodman's trade mark is rather clever, don't you think? Every time I see it I think of "Woodman, spare that tree."

——o——

I see by last month's back cover that the A. I. Root Company have a corrugated windbreak illustrated. You should have some of these for protection for your Canadian bees.

——o——

I uphold F. L. Luce in his regulations of bees. I suggest, like Will Rogers, that to simplify the traffic ordinance that all bees fly East on Mondays, north on Tuesdays, West on Wednesdays and South on Thursdays. Traffic shall be free to select its own direction on Friday and to travel at one-half speed. Saturday's traffic direction will rest upon a selection made by the queen and a committee of workers and three drones. On Sundays all bees are ordered confined to their respective hives because of the weekly pilgrimage of humans in motor cars hunting new billboards with illustrations of women and cigarettes and city people exploring for new poison in thickets.

Questions and Answers

By Nun Other Thanme, Assisted by N. O. Bodielse.

Q.—I find when examining the combs in my hives that in many of the cells there are little white worms. Should these be removed?

I. A. Wate.

Ans.—By all means take out these worms. To leave them in the hive will mean an increase in the number of bees and consequently an inclination to swarm. A swarm means that you will need more hives, and hives cost money.

Q.—One of my neighbors has bees and I am interested in them. I have no money to spend on bees. How can I secure them? N. O. Money.

Ans.—I appreciate your query. I was in the same predicament myself and found that by eating much acid fruit causing indigestion, and by going swimming immediately afterwards, I could have some hives of my own. Try it.

Q.—My neighbor insinuates that my bees attack him when he hammers on my hives. What shall I do?

Iona Colonie.

Ans.—There are two ways to settle this question. The best way is to place dummy hives or empty ones for him to hammer. If convenient you might have him bring you the bees that sting him and you will severely reprimand each and every offender.

Q.—I have some honey to sell. I am going to advertise it. Shall I put a picture of my apiary in the advertisement? Iwan Tonoe.

Ans.—Yes, if you do not put it in any more often than Swift & Co. use a picture of a pig sty to advertise Premium Hams.

Q.—I would like to keep bees, but I cannot stand to be stung. Can you offer any suggestions? U. Noe.

Ans.—My feet won't let me stand to be stung either, but it hurts just as bad when I sit down. To drive a nail without hitting your fingers, keep both hands on the handle of the hammer. To handle a bee without getting stung keep her headed towards you.

Q.—There are only a few fruit trees in bloom near my apiary, yet one of my hives on tested scales showed an increase of twenty pounds in one day. Is this exceptional?

Lotta Flowers.

Ans.—The fact that there were scales in your apiary makes your story sound slightly fishy.

Q.—I am a carpenter and a beekeeper also. I asked a girl to marry me and she said, "Not as long as you are a fool beekeeper." Shall I give up my bees? I. N. Payne.

Ans.—As a carpenter you are on the square and it is plane to be seen that you have desired a higher level. Brace up a bit and show the girl that you can like two kinds of honey at the same time.

C. L. S.